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ABSTRACT

This document consists of illustrated instructor and student manuals developed to teach children outdoor survival skills. The curriculum was prepared for students in grades 5-7, but can be adapted to any grade level. The goal of the training is to increase students' chances of survival if they find themselves in emergency situations while boating, hunting, or hiking. The course is designed for a half-day in the classroom; a few hours at a pool or dock; and another full day building shelters, making signals, and collecting food. The manuals are used most effectively in southeastern Alaska, but can be adapted to other parts of Alaska and the north. The instructor's manual consists of seven chapters covering mental and physical preparation for outdoor trips and emergencies, seven steps to survival, building a survival kit, cold water survival skills, personal flotation devices and survival suits, and an outdoor survival practical. Each chapter includes goals and objectives, materials, presentation plan, introduction, additional reading materials, and quizzes. The instructor's manual also includes teaching agendas, additional references for instructors, videos, and student reading materials. The student manual includes abbreviated text of chapters found in the instructor's manual, illustrations, and reading materials. (LP)

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OUTDOOR SURVIVAL TRAINING

FOR ALASKA'S YOUTH

RC019920

ALASKA SEA GRANT COLLEGE PROGRAM

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OUTDOOR SURVIVAL TRAINING

FOR ALASKA'S YOUTH

Instructor Manual

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About the Author

Dolly Garza, associate professor with the University of Alaska Fairbanks, School of Fisheries and Ocean Sciences, has worked for the Sea Grant Marine Advisory Program for ten years. Garza is an instructor and board member for the Alaska Marine Safety Education Association. She has been teaching outdoor survival and water safety skills to southeast Alaska students since 1985.

Garza has a B.S. in fisheries from the University of Alaska and an M.S. in fisheries from the University of Washington, and she is a Ph.D. candidate at the University of Delaware.

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Thanks to Curriculum Reviewers

The curriculum in this book is based on the Alaska Marine Safety Education Association's *Marine Safety Instructor Training Manual*. The curriculum manuscript was reviewed by the Curriculum Review Committee, who made significant improvements to the content and form, and made additions to the materials to ensure it is relevant to students in grade schools and high schools.

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—Dolly Garza

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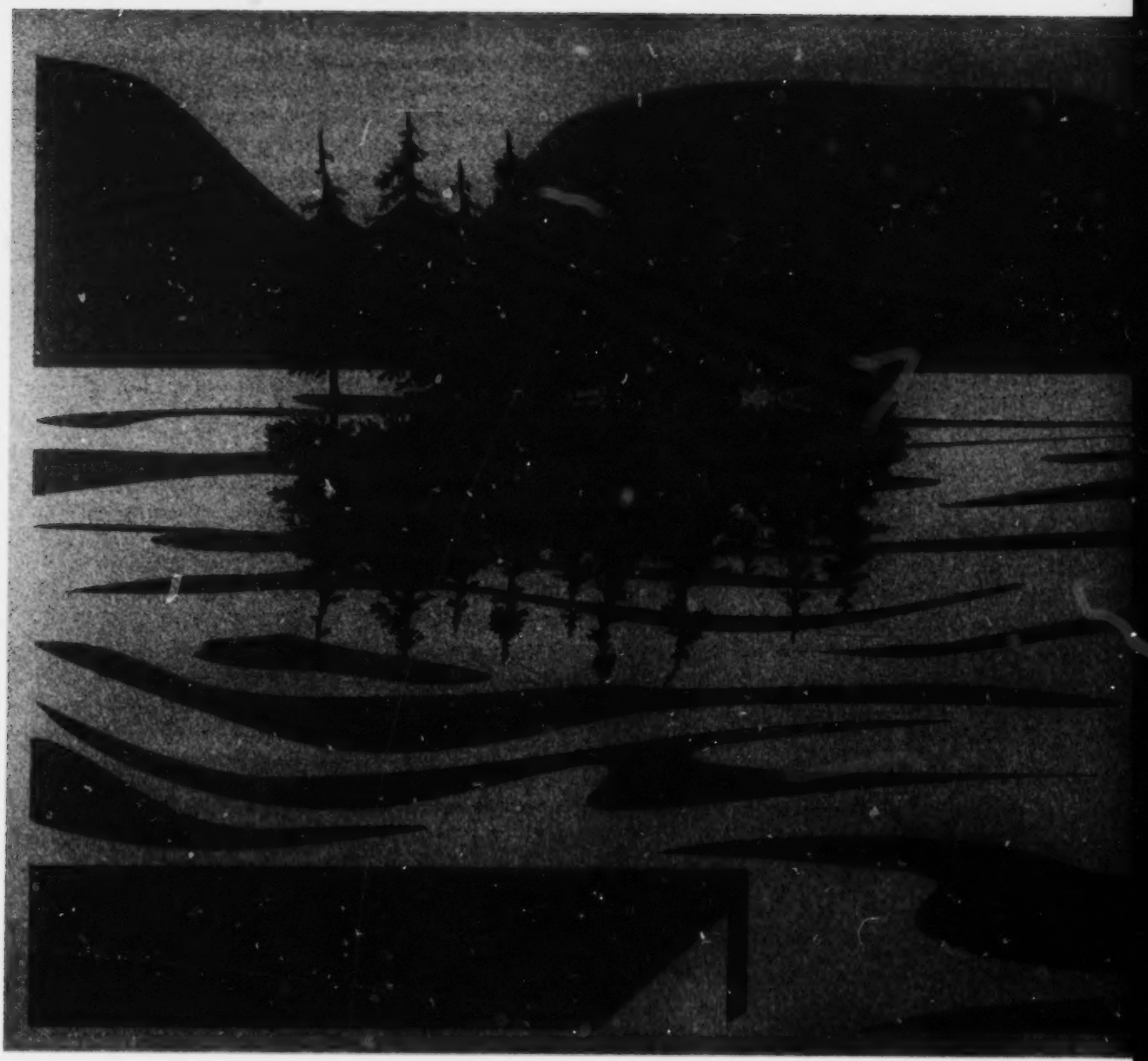


INTRODUCTION

GOAL OF THIS MANUAL

Countless lives are lost each year when hunters, beachcombers, fishermen, and casual travelers find themselves in an outdoor emergency that they are not prepared to handle physically or mentally. Safety and survival training can reduce unnecessary loss of lives by equipping students with the skills and knowledge to successfully deal with outdoor emergencies. It is the goal of this program to provide instructors with basic information to teach safety and survival to Alaska's youth. If the knowledge is effectively acquired, it will stay with the students throughout their lives.

Survival Training for Alaska's Youth: Instructor Manual is a compilation from several sources of safety and survival materials. It contains current information on the subject. The student manual that accompanies this instructor manual is a free guide that students can take home to use and share with their families and friends.

AUDIENCE

This manual was written for students in grades 5-7, although the materials have been used successfully in grades K-12. Lesson plans can be adapted to grades K-4 or 8-12 or to informal education programs such as 4-H or Girl Scouts and Boy Scouts. Sample agendas are included for individual classes, as well as for small schools where the entire student body can participate in the program.

The manual is intended to be used by instructors who have completed safety and survival training or have a strong background in outdoor education. Information and schedules for training opportunities are available from the University of Alaska Marine Advisory Program and the Alaska Marine Safety Education Association (addresses in References section). The instructor should read the introduction to the References section for further preparation.

GEOGRAPHIC REGION

The materials in this book are based on experiences in the Gulf of Alaska coastal areas. For other regions, instructors can alter information (e.g. edible foods) to meet specific needs, while still adhering to the program format.

AUDIOVISUAL MATERIALS

The curriculum includes an optional video program, which serves as a preview of the Outdoor Survival Practical and the Survival Suit Practical for the instructor and students. The video gives a clear idea of the activities and equipment needed, provides a visual guide to the construction of shelters and signals, and tells how to get into and use survival suits.

The video is available for loan or sale from Alaska Sea Grant (see References).

Titles of other videos that can be used to supplement this manual are included in the References section. They can be borrowed or purchased from the Alaska Marine Safety Education Association in Sitka or the University of Alaska Marine Advisory Program in Anchorage (see References). The videos may be used during the lessons for teaching a group of children spanning several age groups, or they can be shown before or after the lessons (see agendas).

TEACHING PLAN

The seven chapters include in-class lectures with accompanying activities, water exercises, and an outdoor field trip. The in-class lessons vary between 15 minutes and one hour, but can take longer. They can be taught consecutively within a two-day period, or individually on separate days. The practicals range from one and a half hours to a full day.

The teaching agenda examples represent a two day program during which students devote their entire time to survival education. The two day agendas have been used in many teaching situations, including fifth graders in school and a class of students from a logging camp.

READING MATERIALS AND INSTRUCTION SHEETS

Reading materials and instruction sheets at the end of the chapters in the Instructor Manual can be used by both instructors and students. They include newspaper and newsletter articles, a note taking guide, a crossword puzzle, and quick reference instruction sheets. The instructor should read all the materials before teaching the classes. The students can read the materials before class, or during the week following the class.

EVALUATION AND TESTING

Four written quizzes are included: a pretest, a seven steps to survival quiz, a survival kit quiz, and a cold water survival quiz. Answers to quizzes are also included. In addition, a check off sheet is included to evaluate students on their ability to carry out various tasks in the outdoor practical. They can be photocopied for use by the chaperones. The pretest should be filled out by the students during the first part of the class on day 1, and the other quizzes can be administered during class or the week following the class.

STUDENT MANUALS

A student manual accompanies this Instructor Manual. Included in the student manual are abbreviated text for all chapters, illustrations, and some reading materials. Quizes are not included.

WAIVERS

The instructor should consider asking parents to sign waivers before class begins, which may exempt the school or organization from responsibility if an accident should happen during the activities. Some legal experts believe that waivers help limit liability by making students aware of the potential hazards. Waivers are a controversial topic. Instructors should make their own choice, consulting their school policy or a lawyer, if necessary, to arrive at a decision.

If you do use a waiver in your class, it should be signed before the class begins. Students should never be pressed to sign a waiver. A sample waiver is at the end of Chapter 1.

Teaching Agenda for Groups of Similar Age Students, Day 1

The total time for the Pool Exercise depends on scheduling and size of group. The time for the Survival Suit Practical depends on the distance to the dock and the size of the group.

For this agenda the videos can be used as a lesson supplement the day before or days following.

8:15 am — Lecture-discussion in the classroom:

Survival Pretest and Preparation for the Emergency (Chapter 1) (20 min)

Seven Steps to Survival (Chapter 2) (1 hr, without videos)

Survival Kits (Chapter 3) (20 min, without videos)

Video for Outdoor Survival Practical and Survival Suit Practical

10:25 am — Break

10:30 am — Cold Water Survival Skills Classroom Session (Chapter 4) (20 min, without videos)

Review PFD Pool Practical activities by demonstrating PFDs, H.E.L.P., Huddle, and reach to rescue (Chapter 5)

Head to pool and get dressed

11:00 am — PFD Pool Practical
(If you do not have a pool, substitute the lecture in Chapter 5)

Station 1 - H.E.L.P.
Station 2 - Huddle
Station 3 - Reach-to-Rescue

Free swimming (optional)

11:50 am — Dress and return to class

Noon Lunch

12:30 pm — Review Survival Suit Practical activities (Chapter 6) and go to the dock

12:45 pm — Survival Suit Practical
Each student gets in water wearing a suit

1:55 pm — Re-pack suits
Return to school
Rinse suits and hang them to dry

2:30 pm — Give Quizes (Chapters 2, 3, and 4)

Teaching Agenda for Small Schools or Groups of Mixed Age Students, Day 1

All students in the school can be divided into two groups, K-4 and 5-12, for the morning. The groups can be combined in the afternoon. Since it is assumed that a pool is not available in small rural communities, no pool activity is on this agenda. (For this agenda quizes can be given on the following days.)

8:15 am ≈ Give pretest. Then break into groups

8:30 am ≈ *Elementary students:*
Watch *Shore Survival* and *Sea Survival* videos
(21 minutes each, see References, Videos)

8:30 am ≈ *High school students:*
Lecture-Discussions: Preparation for the Emergency, and Seven Steps to Survival (Chapters 1 and 2)

9:45 am-10:00 am ≈ Break: Rotate groups or move video equipment.

10:00 am-11:35 am ≈ *Elementary students:*
Lecture-Discussions: Preparation for the Emergency, and Seven Steps to Survival (Chapters 1 and 2)

10:00 am-11:35 am ≈ *High school students:*
Watch *Sea Survival* and *Shore Survival* videos
(21 minutes each, see References, Videos)

11:05 am-11:15 am ≈ Combine classes

11:15 am-12:00 noon ≈ Survival Kits (Chapter 3)
Video: Outdoor Survival Practical and Survival Suit Practical

Noon Lunch

12:30 pm-1:30 pm ≈ Lecture-Discussion: Cold Water Survival Skills (Chapter 4)
Watch *It Could Have Been Prevented* video
(17 minutes)

Review PFD Pool Practical activities by demonstrating PFDs, H.E.L.P., Huddle, and Reach to Rescue
(Chapter 5)

1:30 pm ≈ Head to dock with survival suits, or to pool with PFDs

1:40 pm ≈ Survival Suit Practical or PFD Pool Practical
(Chapter 5 or 6)

2:30 pm ≈ Return to class, rinse suits, and hang them to dry

* Videos can be purchased or borrowed from the University of Alaska Marine Advisory Program or the Alaska Sea Grant College Program (see Reference section for addresses).

Teaching Agenda for All Age Groups, Day 2

Departure time is based on an 8:30-9:30 am low tide.

8:30 am ≈ Leave school for designated area

8:45 am ≈ Organize

9:00 am ≈ Collect food

9:45 am ≈ Review collected food
(Instructor can prepare food between this exercise and lunchtime)

10:00 am ≈ Students build shelters

11:30 am ≈ Critique shelters
- small
- insulative
- weatherproof

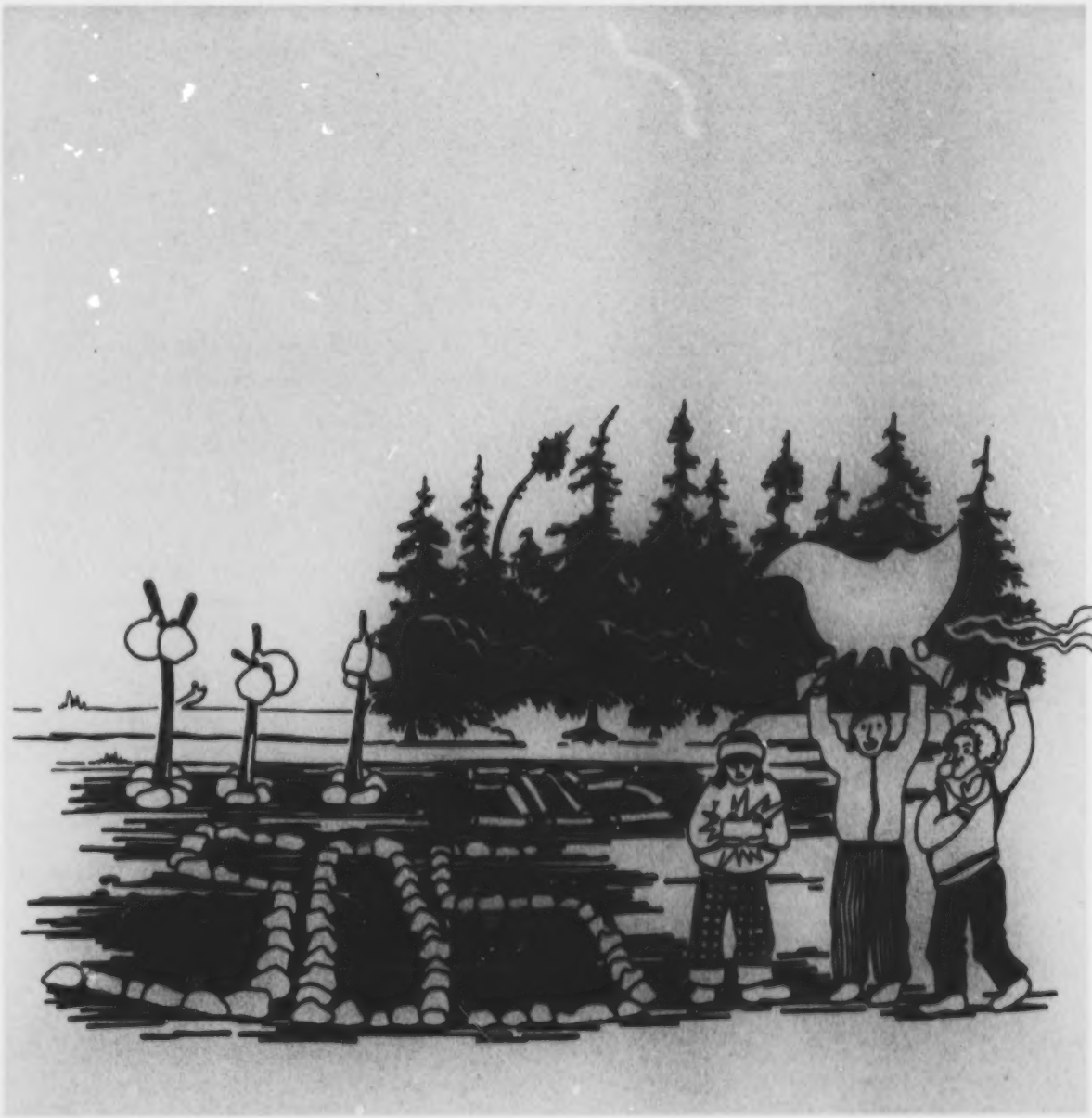
Noon Lunch: Eat collected foods as well as packed lunches
Discuss water collecting methods during lunch

12:30 pm ≈ Construct signals (two signals per group)
- one by air (SOS)
- one by sea (hanging debris)

12:50 pm ≈ Build fire with flint box or magnesium starter
- keep it burning for at least 10 minutes

1:15 pm ≈ Clean-up
- tear down shelters and signals
- take out all plastic

1:30 pm ≈ Leave beach and go back to school



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CHAPTER 1
PREPARATION FOR THE EMERGENCY

GOAL

To impress upon students the need to prepare for an emergency before leaving home.

OBJECTIVES

The students will be able to:

1. Name the two categories of preparation.
2. Explain why depression is the most dangerous emotion to have in an emergency.
3. Describe how to plan a trip and explain why it is important.

MATERIALS

1. Photocopies of pretest
2. Clothing made of polypropylene, wool, and cotton; a small basin with water.

PRESENTATION PLAN

Give the pretest. Present information in a lecture-discussion format, including the pocket-contents activity. If time permits, demonstrate dry and wet clothing. Have the students read the survival stories as homework and discuss them later during the week. They could also write a different ending to the story. The survival stories are printed in the student manual.

INTRODUCTION

Most of us spend time in the out-of-doors and can find ourselves in an emergency at any time. Discuss students' out-of-doors activities.

In preparing for an emergency it is important to think "it can happen to me." An emergency can surface at any time. Discuss emergency situations that might arise during outdoor activities.

It is important to prepare for an emergency before leaving home or we will not have the necessary equipment or skills to face an unexpected emergency.

Chances of survival in an emergency situation are increased if you are prepared in two ways. Write these on the board:

Mental preparation

- *Positive mental attitude*
- *Will to survive*

Physical preparation

- *Good health*
- *Proper survival skills*
- *Survival equipment*

MENTAL PREPARATION

Discuss how the students would feel in an emergency situation. Write these three on the board, plus other responses.

- *Panic (scared)*
- *Fear (afraid)*
- *Depression (feel bad)*

Examples of other likely answers are: cold, tired, hungry.

Discuss why these three emotions are bad, and which one is the most dangerous.

> The most dangerous is DEPRESSION (feel really bad), because it destroys the will to live.
>
> Second is PANIC (disorganization), because a person can't decide which task is the most important. He or she runs from one task to the next, and may accomplish nothing.
>
> Third is FEAR. Fear can be good if we know the proper survival skills. Fear organizes us. A scared person might say to himself, "I have to build a shelter to stay warm or I will die."

These feelings are normal. By knowing proper survival skills we can develop the will to survive and minimize the effects of negative emotions.

In developing the proper mental attitude we must:

1. Accept the fact that it can happen to us.
2. Realize that what we have on may be all that we have in an emergency.
3. Develop a will to survive by controlling fear and believing that we will survive.

Write these on the board.

Survival is:

- *Attitude*
- *Equipment*
- *Skill*

Activity

Have students take out all the things in their pockets, and ask them how they would use each one in an emergency. Discuss items that can be used for shelters, signals, water, food, and play.

PHYSICAL PREPARATION

Materials: Display wool, polypropylene, and cotton items in the classroom.

Tell students that physical preparation includes:

1. Health: Don't go on an outing when you are not in the best of health or not eating properly.
2. Survival skills: We are learning those now.
3. Survival equipment: Including a survival kit, which we will put together in class (see Chapter 3).

Remember: The best survival equipment you have is between your ears (your brain).

MAKING A TRIP PLAN

Discuss with students what they should do to prepare before they go on an outdoor trip.

1. Check the weather forecast. Ask elders and other experienced adults what they expect the weather to be like.
2. Know the following:
   - Where you are going.
   - The route you are taking.
   - How long it will take to get there.
   - How and when you will be coming back.
3. Tell at least one person (grownup) your plans and let them know at what time they should call for help (e.g. two hours after overdue).
4. Never travel alone, especially if you are young and don't know the area well. It is best to travel in groups of

three or four. If one person has an accident, one person can go for help and the other can stay with the injured person.

5. Take proper clothing and gear including long underwear, rain pants, rain jacket, extra mittens, socks, a hat, and a survival kit. Dress in layers. Wool or polypropylene are the best insulative materials. Cotton is a poor insulating material, even though cotton is what most people use (jeans). Insulation is trapping the body's heat next to the body.

Discuss other things students should take on an outing. (Camping gear, firearms, fishing gear, etc.)

■ Activity

Materials: Wool, polypropylene, and cotton clothing; water basin.

Place some clothes made of wool, polypropylene, and cotton in cold water. Ring them out and pass around. Hang them up to dry, and at the end of the day pass them around again and discuss how they would feel on us if we were out in the cold. Compare how long each type of material will take to dry.

READING AND DISCUSSION

The teacher should discuss the Jeffrey Young stories about the nine-year-old boy who was lost in the Sitka area for five days before his rescue. (Both articles are printed in the *Student Manual*.)

What did he have going for him?

- Warm weather
- Water
- He built a shelter
- He decided to stay in one place
- He had the will to survive
- He knew salmonberries were safe to eat

What would have made his rescue quicker?

- Signals!

The Daily Sentinel

Sitka, Alaska Monday August 24, 1987

Lost Boy Rescued After 5 Days

Searcher Finds 9-Year-Old In Good Shape On Gavan Hill

By **Allen Sykora**
Sentinel Staff Writer

"Hey, my name is Jeff." The child's voice from a wooded ravine led Dave Caldwell to nine-year-old Jeffrey Young Sunday morning. The boy was rescued safe and sound after five nights in the woods without shelter and only berries to eat.

Since Wednesday morning, the boy had been the subject of one of the most intensive missing person searches in Sitka history.

Rescuers and a doctor at Mt. Edgecumbe Hospital all described the boy as in remarkably good condition for his ordeal. He was found by a member of a volunteer search team high on Gavan Hill at about 11 a.m. Sunday.

Because of the rugged terrain, it took a couple of hours for rescuers to administer first aid and carry him to the nearest road, where an ambulance was waiting to take him to Mt. Edgecumbe Hospital.

"He's doing remarkably well," said Dr. Thomas Krahn, who said the boy suffered only some swelling of the feet and some bruises.

"He's one of the healthiest people I've seen today," said the Mt. Edgecumbe hospital staff physician. After the examination, Jeffrey was taken to a room to rest and recover.

The news of the rescue came as a team of bloodhounds and their handlers, expenses covered by volunteers, were being flown to Sitka for another attempt to solve the mystery of the disappearance of the boy, on a hillside in direct view of most Sitka residents. Jeffrey had last been seen Tuesday morning by his brother Tom, from whom he had become separated as Tom was hunting deer on the hill.

Joyous family members and friends lined the hospital hallway outside the emergency room Sunday afternoon while the boy was being examined upon arrival by ambulance. He raised his head and flashed them a big smile as he was wheeled out to a hospital room.

Dave Caldwell, who found the boy, was in a team with Rod Lowe and Kevin Kambak. They borrowed a two-way radio from the fire hall and headed up Gavan Hill early Sunday morning, following a trail that begins behind the city landfill.

They made their way to some cliffs, which seemed a likely spot for a closer look. Caldwell walked above the cliffs, while the other two men were below.

They were calling out to each other to keep track of the whereabouts of their own team members in the nearby brush, Caldwell said. At one time he was out of earshot of the others, so when they got back within hearing distance they shouted that they would continue their respective courses until they could meet back on the trail.

"I went along for a while and lost vocal contact again," said Caldwell, "so instead of calling Rod's name, I called Jeff's name."

Caldwell said he had not been calling the boy's name all day, but the third time he called out the boy's name, a child's voice answered.

"He said, 'Hey, my name is Jeff,'" said Caldwell.

Caldwell said he was stunned to hear the young voice from nearby, and scarcely believed his ears. But he quickly followed the voice to a gully, where he spotted the boy.

Jeffrey was standing, but said he had a hurt leg. His clothes were wet from the waist down.

"He sure was glad to see somebody," said Caldwell. Caldwell happened to be the carrier of the two-way radio carried by his party. He called in the news that the town had been praying for: Jeffrey Young had been found alive and well.

Caldwell fired two shots to summon his companions, but they were unable to find him until helicopter pilot Arnie Johnson directed them to the spot.

Don Kluting, a member of the fire department's search and rescue team, was with a group beating through brush behind the Public Safety Academy, when he heard Caldwell's broadcast. The message had not been picked up at the fire

Story continues on page 12

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...in Jeffrey's favor were the unusually warm and sunny weather of recent days, and the nearby trickle of water that flowed through the gully in which he was located.

...while a person can survive for long periods without food, he can't last more than a couple of days without water.

Lost boy

Continued from page 11

hall, so Kluting relayed the news.

"Then we ran up the hill," he said.

"The kid was in really high spirits," said Kluting. "He was happy, he was able to get up and walk." Nevertheless, the rescuers brought Jeffrey down the mountain on a stretcher that had been lowered by the helicopter.

Johnson was unable to find any clearing in the vicinity big enough to land the helicopter, which would have been necessary to get him aboard.

The professional search and rescue personnel who first reached Jeffrey sent a radio message to the fire hall that the boy complained of an injured leg, but that his vital signs were in the range of normal. As a precaution, they placed him in a hypothermia warming bag and strapped him to the stretcher.

News of the rescue quickly spread through town. Throughout the community, the yellow and white helicopter was clearly visible hovering above the hillside, marking the progress of the recovery party. In at least one church the news was received only moments after the congregation had prayed for Jeffrey's safe return.

A large crowd gathered at the base of the main Gavan Hill trail, which begins at the end of Baranof Street. Jeffrey's parents, family members, friends, and curious onlookers had walked up the path a couple hundred yards to the first open muskeg area, and cheered and hugged one another as rescuers emerged from the woods carrying the boy, wrapped from head to toe in the rescue blanket. Without pausing, the litter bearers placed Jeffrey into the waiting ambulance. Family hugged and shook hands with Kambak, Caldwell, and Lowe.

"I think I was happier than he was," said Caldwell about his feelings when first coming across the boy. "And he was pretty happy. If it wasn't for Jehova looking out for everyone, we wouldn't have found him. God is the one who led us through. That's who I've got to credit."

Two factors that worked in Jeffrey's favor were the unusually warm and sunny weather of recent days, and the nearby trickle of water that flowed through the gully in which he was located. Dr. Krahn and rescue personnel agreed that if it had been as rainy as usual in Sitka, without shelter the boy would have been at risk of life-threatening hypothermia.

And Kluting observed that while a person can survive for long periods without food, he can't last more than a couple of days without water.

Caldwell said Jeffrey told him he was able to see the Coast Guard and privately owned helicopters overhead during the five days of searching, but that he had not been able to signal them. However, said Caldwell, the boy told him he had not heard the voices of any of the scores of searchers on the ground until the final day. It was not immediately clear how long Young had been at the spot he was found.

Caldwell said the boy told him he had eaten some berries early in the ordeal, but that he had eaten nothing for the last couple of days before his rescue, because there were no berry bushes in the gully. From the gully, the boy could see the town and airport, Caldwell said.

"I've got to hand it to Jeffrey," said Caldwell. "He's a strong boy." Caldwell said the boy told him that he and his older brother had often gone into the woods. "He said his

Story continues on page 13

Lost boy

Continued from page 12

brother was top of the world," said Caldwell.

Authorities had suspended the official search Friday night after the intensive effort of the previous three days had not located the boy. Up to that time, said a fire department spokesman, "official" search parties had spent more than 3,000 search hours on the ground in the woods, and an undetermined hundreds of additional hours had been put in by others, including family members who went out on their own.

Helicopters spent 32 hours in the air during the search, including 15.6 hours of flight time in which the Coast Guard was using infrared body heat detectors, said the fire department spokesman. He added that three dogs and their handlers from Juneau had spent 100 hours in the woods.

Although the "official" search was suspended, some 80 volunteers, including members of the fire department, used the fire hall as a starting point for their efforts on Saturday and Sunday. And, as on previous days, an undetermined number went into the woods to search without checking in.

Early Thursday night searchers' hopes had been buoyed when a team headed by Kluting discovered a site on the hillside where they believed the boy had spent a night.

Under the fallen tree someone had lined up sticks to form a wall. There were a child's footprints, where dirt was kicked against the side. Caldwell said the boy, when rescued, confirmed he had spent one night under a log.

Friday's search from the log shelter went down into the Indian River Valley, which seemed to be the direction the small footprints led. Searchers formed a long line, spaced about 10 yards apart, and plowed through devil's club, blueberry bushes, and deadfalls for the rest of the day.

Kluting said it now appears that Jeffrey went around the side of Gavan Hill and actually climbed higher, to within about 500 feet from the top. At one point, continued Kluting, the boy must have actually crossed the main Gavan Hill trail, apparently without recognizing it, in order to have reached the spot where he was found.

Many Sitkans took off from work and gave up leisure time to beat through the brush, and many others donated food and beverages for the search teams.

Searchers ranged from teenagers to men over 60, who lugged backpacks through the woods all day. Many commented that they were motivated by visions of how they would feel if it were their own child lost in the woods.

Jim and Nancy Hope used their own credit card to advance the expenses of the three bloodhounds and their trainers Sunday.

Said Caldwell, also a father, when the search was ended, "I kept thinking how his folks must feel. A couple dark nights, it really bothered me. I knew he was still out there somewhere. I had a gut feeling."

...if it had been as rainy as usual in Sitka, without shelter the boy would have been at risk of life-threatening hypothermia.

The Daily Sentinel

Sitka, Alaska Tuesday August 25, 1987

Boy Bounces Back After 5 Days On Hill

By **Allen Sykora**
Sentinel Staff Writer

Nine-year-old Jeffrey Young says he "wasn't ever scared" during his five days and nights alone on Gavan Hill, but adds he'd rather see people than trees."

The boy spoke about his adventure this morning in his Mt. Edgecumbe Hospital room as he opened a model airplane, one of the many gifts from the steady stream of family and friends who have visited him.

Jeffrey was reported missing one week ago today, when he became separated while following his older brother Tom on a hunting trip. The brother reported that he left Jeffrey on the trail to rest, but that Jeffrey was no longer there when he returned.

Jeffrey said he waited for some time, and then decided to walk back to town, and got lost. He said he spent one night underneath a log, forming a wall on one side by arranging sticks. Searchers found this place Thursday night, and the discovery spurred new hope for finding the boy.

Jeffrey said he left that shelter and wandered on, until he ended up in the steep gully where he was finally located by a volunteer searcher Sunday morning.

"I was trying to come back to town and my leg started to get sore," he said today. "I decided to stay there and wait for someone to find me. That's the only way I'd make it."

The examining doctor said Jeffrey was in generally good condition. He suffered some bruises and swollen feet.

"I wasn't ever scared at all," said Jeffrey. However, he said, when searcher Dave Caldwell walked nearby shouting his name, "I was pretty happy to hear a voice. It's better to see people than it is to see trees."

Jeffrey said he made a bargain with God while on the hill.

"I asked him if I could go home, then I wouldn't fight with my mom any more. I was thinking about getting home and stuff, and riding my bike. Only now I can't," due to his swollen feet, he said.

Dr. Thomas Krahn said no decision had been made on when the youth would be discharged from the hospital. The Mt. Edgecumbe staff physician said Jeffrey was being held for observation due to the swollen feet.

Jeffrey said he didn't get hungry the first couple of days because of an abundance of berries. "There was a bunch of salmonberries up there," he said.

But he ended up in a gully he couldn't get out of and during his last two days on the hillside he had access only to water, he said.

Jeffrey will enter the third grade in the fall. He said he had never hiked up Gavan Hill before, although he had been on top of nearby Harbor Mountain. The story of the search and subsequent rescue of Jeffrey has received national attention. His mother, Jennifer Young, said today that she has received telephone calls from the International News Service and NBC News.

Beginning Wednesday, Sitka rescue personnel and volunteers spent thousands of hours combing Gavan Hill and the Indian River Valley. In addition, Coast Guard and private helicopters spent 32 hours searching for the youth.

In addition, more than 100 dog-hours were logged by official search parties, and preparations were under way to bring in bloodhounds when Jeffrey was found on Sunday.

SEADOGS, a Juneau-based group that makes their trained tracking dogs available for searches, brought two golden retrievers and one German shepherd into the search. A golden retriever owned by Sitka Volunteer Fire Department member Karen Royce was also on Gavan Hill.

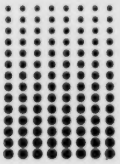
Some volunteers brought their own dogs to help search at various times, authorities said.

The SEADOGS (Southeast Alaska Dogs) are trained to follow the airborne scent of a search subject, explained coordinator Bruce Bowler. The dogs run freely and follow voice and hand commands.

On the other hand, he said, bloodhounds are generally deployed on a leash and follow the scent trail on the ground. Experienced bloodhounds can also follow an airborne scent, he said.

Besides "trailing," SEADOGS are trained to sniff out victims in cave-ins, earthquakes and avalanches, said Bowler. The handlers also undergo intensive training, not only in trailing with the dogs, but in use of compass and maps, first aid, and wilderness survival, so they are prepared to enter unfamiliar wilderness terrain, said Bowler.

WAIVER FORM



COLD WATER SURVIVAL PROGRAM WAIVER AND RELEASE

I, _____ parent of
parent name

_____
student name

recognize the activities in which my son/daughter desires to participate involve a risk of injury. I am aware and accept the risks involved, which may include the possibility of striking objects when entering water, cardiac arrest, ventricular fibrillation, chest pain from contact with cold water, inadvertent gasping and inhalation of water, sudden drowning syndrome, or drowning from other causes. I waive and release any and all rights and claims for damages

against _____, its employees, agents,

and other representatives in the event of accidental injury or illness resulting from participation in the Outdoor Survival Training for Alaska's Youth program.

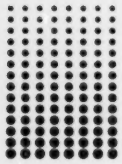
NAME _____ DATE_____
parent signature

Please list any health problems or special consideration that may limit your child's participation in the program.

_____

_____

_____



SURVIVAL PRETEST

Name_____

OUTDOOR SURVIVAL

1. List the Seven Steps to Survival in correct order:

   1)_____

   2)_____

   3)_____

   4)_____

   5)_____

   6)_____

   7)_____

2. A survival kit should be located on/in your (circle the correct place):

   a. boat

   b. body

   c. backpack

3. A shelter must be _____, insulative, and weatherproof.

4. Name a fabric that keeps you warm even when it is wet:_____.

5. To signal distress, _____ is the magic number.

6. To ensure rescue, a signal must attract _____ and send a _____ of distress.

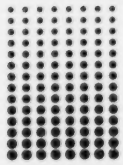
7. To make sure creek water is safe to drink, you must boil it for _____ minutes.

8. List two edible plants found in your region.

   1. _____

   2. _____

SURVIVAL PRETEST



9. List two poisonous plants found in your region.

1. _____

2. _____

10. To avoid depression you must maintain a positive mental _____.

COLD WATER SAFETY

11. If you know how to swim you should swim out to a drowning victim to try to save him/her.
(circle correct answer)

True

False

12. If you are by yourself and fall into the ocean you should
(check the best answer)

_____ try to swim to shore

_____ get into the H.E.L.P. position

_____ get into the huddle position

13. If you have fallen in the water with two other people, get in the _____ position.
(H.E.L.P. or Huddle)

14. All waters in Alaska are so cold that if you fall in and are rescued quickly you still could get

_____.

15. The two factors that determine how long you will survive in cold water are _____ (the amount of buoyancy you have), and _____ (this allows you to retain body heat).

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SURVIVAL PRETEST: WITH ANSWERS

Name_____

OUTDOOR SURVIVAL

1. List the Seven Steps to Survival in correct order:

   (1) Recognition

   (2) Inventory

   (3) Shelter

   (4) Signals

   (5) Water

   (6) Food

   (7) Play

2. A survival kit should be located on/in your (circle the correct place):

   a) boat

   b) body

   c) backpack

3. A shelter must be small, insulative, and weatherproof.

4. Name a fabric that keeps you warm even when it is wet: wool or polypropylene.

5. To signal distress, three is the magic number.

6. To ensure rescue, a signal must attract attention and send a message of distress.

7. To make sure creek water is safe to drink, you must boil it for 20 minutes.

8. List two edible plants found in your region.
   (This answer varies)

9. List two poisonous plants found in your region.
(This answer varies)

10. To avoid depression you must maintain a positive mental attitude.

COLD WATER SAFETY

11. If you know how to swim you should swim out to a drowning victim to try to save him/her. (circle correct answer)

True

False

12. If you are by yourself and fall into the ocean you should (check the best answer)

_____ try to swim to shore

_____X_____ get into the H.E.L.P. position

_____ get into the huddle position

13. If you have fallen in the water with two other people, get in the _____ position. (H.E.L.P. or Huddle)

14. All waters in Alaska are so cold that if you fall in and are rescued quickly you still could get hypothermia.

15. The two factors that determine how long you will survive in cold water are flotation (the amount of buoyancy you have), and insulation (this allows you to retain body heat).

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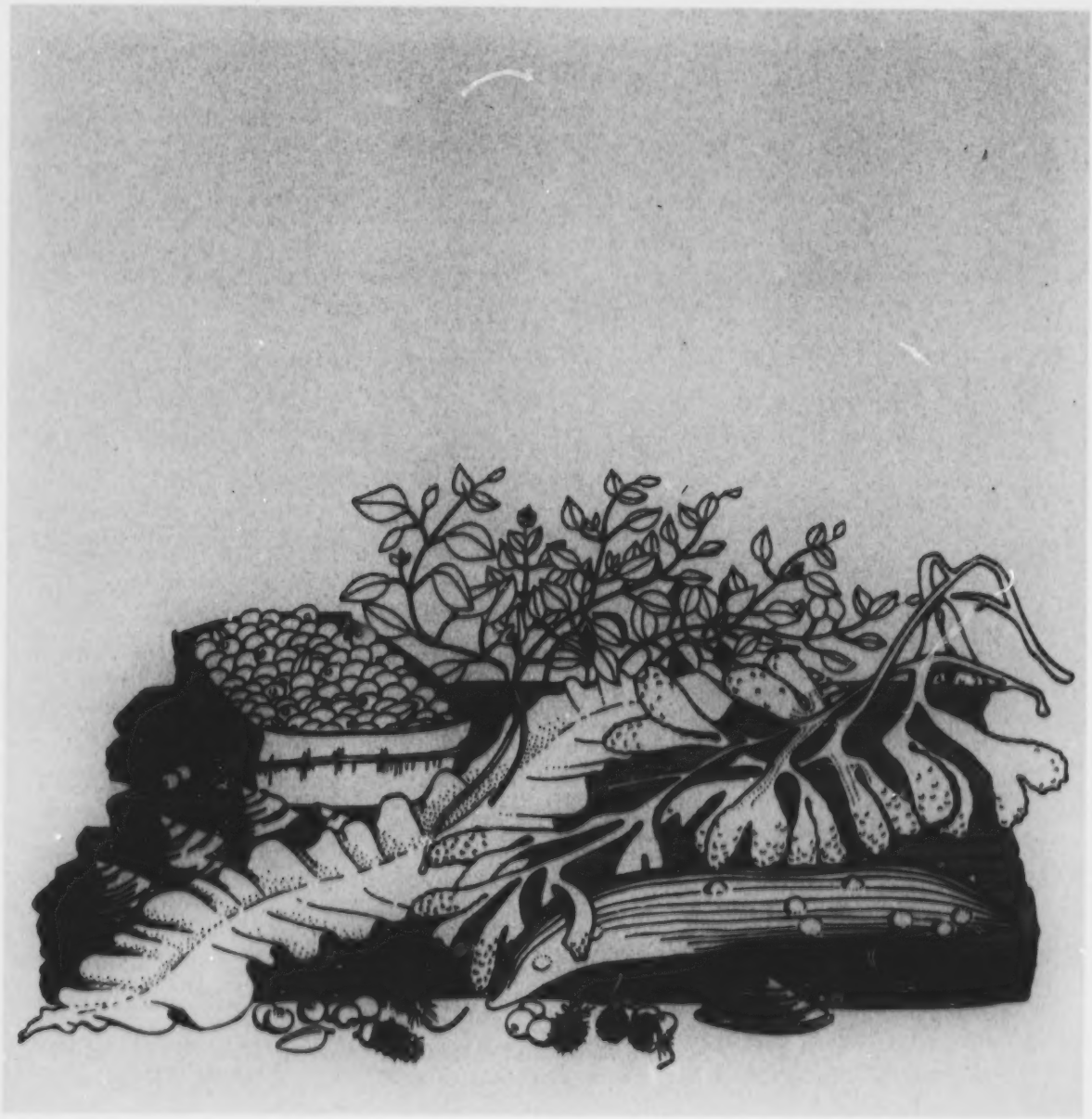


CHAPTER 2
SEVEN STEPS TO SURVIVAL
CLASSROOM SESSION

GOAL

To introduce students to the Seven Steps to Survival as they relate to shore and woods.

OBJECTIVES

The students will be able to:

1. List in order the Seven Steps to Survival.
2. Explain why recognition is the first and most important step.
3. List three elements of a good shelter and why shelter is important.
4. List the two "musts" of a signal.
5. Determine if water is safe before consuming it.
6. List three local edible plants and animals that are safe to eat.
7. Tell why play is so important to surviving an emergency.

EQUIPMENT AND MATERIALS

1. Video that previews the Outdoor Survival Practical and Survival Suit Practical, videocassette recorder, and television. All videos can be purchased or borrowed from the University of Alaska Marine Advisory Program in Anchorage or the Alaska Sea Grant College Program in Fairbanks (see References).
2. The *Sea Survival* and *Shore Survival* videos (Note: the *Shore Survival* video has profanities in it).
3. Survival kit items: At least two heavy weight garbage bags, surveyor tape, warm clothes (wool, polypropylene, cotton, silk), wool hat, fire starting equipment, etc. (See lists in Chapter 3).
4. Photocopies of Seven Steps to Survival Quiz, and articles at the end of this chapter.

PRESENTATION PLAN

This lengthy lesson plan can be divided into two or three teaching sessions. Videos can be included in the lecture-demonstration, or they can be shown on other days.

1. Make sure students use their copies of the Student Note Taking Guide, printed in the *Student Manual*.
2. Present lecture-discussion
3. Assign the Survival Crossword Puzzle and the Shore Survival for Alaska's youth article when appropriate. The Crossword puzzle is printed in the *Student Manual*.
4. Show videos as a followup at a later time.
5. For older students: The Giardia reference is more technical and should be read by the older students when appropriate.
6. The quiz can be given at the end of the day.

INTRODUCTION

Part of developing proper survival skills and a positive mental attitude is knowing the Seven Steps to Survival. These steps were developed by survival instructors who spent years asking survivors what they did that allowed them to survive an emergency. Knowing these steps will increase chances of surviving an emergency situation.

Ask students to guess the seven steps and their correct order before going into each step.

1. RECOGNITION "Oh no I'm in trouble!"

The first and most important step is recognizing that you are in an emergency and that if you do not do something about it you could die.

Discuss different types of emergencies the students could face.

- If you are out berry picking with your brother and you separate from each other, are you in an emergency? What if it is getting dark and you are not sure where you are or how to get back home?
- If you are out boating and your outboard starts sputtering, are you in an emergency? What if your engine dies and you start drifting toward a big rock?

Discuss at what point in each situation they should take action in order to survive an emergency. (After the boat hits the rock? After it gets dark? Or earlier when they still have time to take action?).

It is important to be ready and prepared to take action before it is too late.

Set up an imaginary emergency situation to use for this chapter. Two hikers who get lost on shore, with only their survival kits and a few items in their pockets, is a good setup for discussion purposes.

2. *INVENTORY "What do I have, what should I do?"*

S - sit

T - think

O - observe

P - plan

Tell students they must determine what they have going for and against them.

An inventory has three parts:

- Critical health needs
- Environment
- Equipment and survival skills

First, address critical health needs (for example, hypothermia must be dealt with immediately).

Second, minimize the negative effects of the environment—seek an area sheltered from wind and rain. People who are along the shore should get back in the woods to protect themselves from the wind.

Third, determine what you have on you and what you can use in the environment to improve your situation. Discuss what you could use—driftwood, branches, etc. in an emergency.

Most people end up in an emergency with nothing more than what they have on their body. This is why it is so important to have a survival kit on your person, rather than stowed on a boat or elsewhere. (Survival kits are covered in Chapter 3.)

3. SHELTER "I need to stay warm."

A shelter is anything that protects you from the environment.

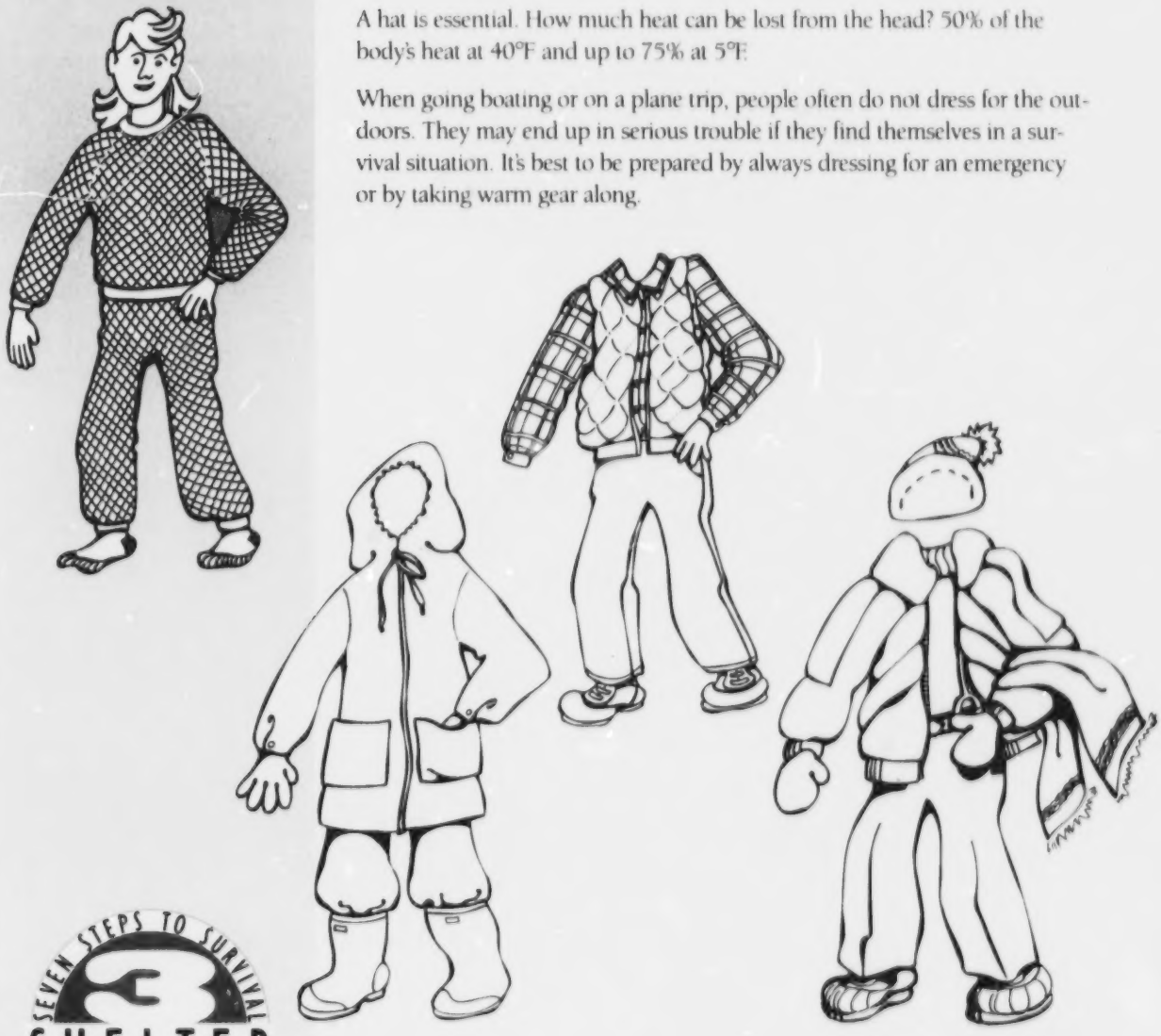
People who die in survival situations generally die from one of two causes—drowning or hypothermia. What is hypothermia? It is the lowering of the body core temperature. Hypothermia symptoms include shivering (one of the first signs), depression (very serious because it can destroy the will to survive), incoherent speech, and loss of coordination (see Chapter 4).

Primary Shelter

Primary shelter is clothing. The best way to dress for an outing is in layers, in fabrics like wool or polypropylene. Wool and polypropylene are warmer than cotton and, most important, they insulate when wet.

A hat is essential. How much heat can be lost from the head? 50% of the body's heat at 40°F and up to 75% at 5°F.

When going boating or on a plane trip, people often do not dress for the outdoors. They may end up in serious trouble if they find themselves in a survival situation. It's best to be prepared by always dressing for an emergency or by taking warm gear along.



Secondary Shelter

An emergency shelter is something you can build to further protect you from the environment. There are three "musts" to a good shelter.

A good shelter must be: (write on board in a corner for future reference)

- *Small*
- *Insulative*
- *Weatherproof from wind and rain*

The purpose of the shelter is to trap your body heat next to your body, which keeps you as warm as possible. The shelter must be small, since the body will be the only heater. The insulation will trap body heat, and the weatherproofing will help prevent further heat loss. A well built shelter will look large from the outside, but its interior space must be only big enough to fit you.

Emergency shelters covered here are:

- Garbage sleeping bag (grades K-1)
- Debris bed (grades 2-4/5)
- Debris hut (grades 4/5-12)

The garbage sleeping bag and the debris bed shelter are temporary and quick. They can be made in a hurry in an emergency. The debris hut shelter is more sturdy and will protect for a longer time.

Garbage Sleeping Bag (grades K-1)

Open up a garbage bag and ask students how they would use it for shelter. The simple garbage sleeping bag is just the right size for young people (5 years old) and they can build it themselves. (Illustrate with garbage bags and draw diagram on board.)

Start with one garbage bag and fill it with debris (twigs, moss, leaves, small branches, grass).

Then hollow out the center and put in another garbage bag. This is the garbage sleeping bag. Does it fit the three criteria: windproof and waterproof, insulative, and small? Yes, although it is not very insulative.

When inside a garbage sleeping bag, a child should wear a wool hat and keep the head out of the bag. Ask them why the head should be out of the bag. Answer: If they breathe in the bag, water will accumulate from respiration.

Position the bag next to a log or tree to shelter from wind and rain.

Will the garbage sleeping bag fit a big person? No. But a small adult could use it to cover the legs and use other shelter material for the rest of the body.

SEVEN STEPS TO SURVIVAL
SHELTER

Debris Bed (grades 2-4/5)

The debris bed is a good shelter to build in a hurry, for kids who are too big for the garbage sleeping bed.

How to make the bed: Start with a thick layer of branches (1-2 ft) and cover with moss (1-2 ft).

Discuss with students how thick the layers should be and why. Ask them what will happen when someone lies on the bed. One reason the bed has to be thick is that it will compress.

Cover the moss with plastic sheeting or a garbage bag cut open.

How to make the blanket: Top the bed with another layer of plastic (plastic to plastic) and then cover the second layer of plastic with moss, twigs, boughs, etc.

Does this shelter fit the three criteria: rainproof and windproof, insulative, and small? No—it is not windproof.

Discuss with students how they would put the top layer on after sitting down on the bed.

After the students have learned about the debris bed shelter, discuss when they might build one:

- If someone is hypothermic and in need of immediate help.

- If it is getting dark and you need to build something quickly.
- If you do not have the equipment or energy to build something better.

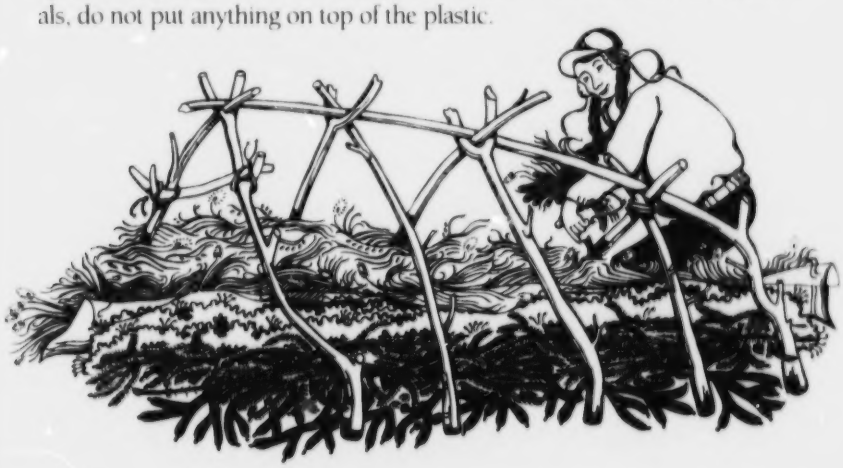
The best emergency shelter is one that meets all three criteria: small, insulative, and weatherproof.

Debris Hut Shelter (grades 4/5-12)

Construct a debris A-frame or a modified lean-to against a log. It will have walls and a front door.

To build a good shelter you must start with the bed. As with the emergency bed, start with a layer of branches (berry bushes, deadfall, etc.). This should be at least 2-3 feet thick.

On top of this put at least one foot of moss, and on top of that put plastic sheeting or a garbage bag cut open. On top of the plastic place 1-2 feet of dry spruce boughs, grass, or other materials. If you do not have any dry materials, do not put anything on top of the plastic.



The bottom branches provide dead air space to insulate against the cold ground. The moss provides a dense insulative layer which prevents further heat loss. The plastic keeps moisture from seeping up from the moss. The boughs or grass provide a top dead air space to trap warm body heat.

Note: This 3 foot bed will compress to about 6 inches when you lie on it, so compress it down before beginning work on the frame.

Next, work on the top. Start with a frame of deadfall, saplings, or driftwood. The frame must be sturdy enough to hold the weight of branches and moss.

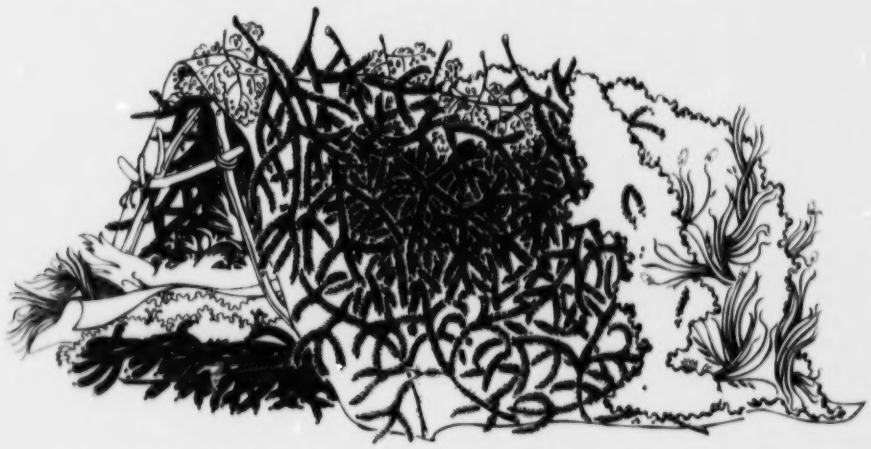
To weatherproof the top, cover the frame with a cut open garbage bag or other plastic. If plastic is not available for waterproofing, use skunk cabbage leaves, bark, big pieces of seaweed, etc.

On top of the plastic stack a dense layer of branches, boughs, berry bushes,

etc. A thick layer of moss, grass or other small material goes on top of the branches.

If you see daylight when you look inside the shelter, the shelter is not weatherproof and the holes should be chinked with more moss or grass. Even small holes can rob the shelter of valuable body heat.

How big should the shelter be? Just big enough to get into. When you are inside, there should be no more than six inches to the top and to each of the sides. Six inches is about equal to the distance between your thumb and little finger when they are outstretched. If the shelter is too big you will expend energy and body heat trying to keep your shelter warm.



If the shelter is too big, put more boughs, branches, or moss on the bed or be prepared to put them on top of you like a blanket after you get in the shelter.

Ask the students what they can use for a door. (The usual answer is plastic or driftwood.) Doors are difficult but very important. Plastic alone or driftwood generally don't work best, because they don't provide much insulation and often don't fit well enough to be rainproof or windproof.

Rig boughs hanging down from the shelter for a flap door. Or stuff plastic with debris and tie it into a ball. After you are in the shelter, thrust the ball into the opening to plug it.

A shelter door cannot have holes in it. Even small holes will allow valuable body heat to escape the shelter. So after spending hours building a good shelter, be sure to spend the time needed to make a good door.

SEVEN STEPS TO SURVIVAL
3
SHELTER

4. SIGNALS "Hey, I need help over here!"

We can help search parties find us by putting up signals. To be effective, signals must do two things: (write on board)

- *attract attention*
- *convey a message of distress*

Ask students what they would use for signals if they were lost (write answers on board). Examples: Build an SOS above the high tide mark using grass, driftwood, seaweed, etc. Hang things like plastic bottles or seaweed from trees in sets of three. Hang shiny reflectors. Build as many signals as possible so rescuers can see you from the air, land, or water. Signals must stand out from the background.

Some signals can be carried along, and some signals can be constructed using locally found materials.

Discuss these signals:

- signal mirrors
- whistles
- SOS of driftwood
- flares
- reflectors (aluminum foil)
- lights
- hanging debris (trash)
- fires and smoke
- EPIRBS (Emergency Position Indicating Radio Beacon)
- VHF radio

There are several rules to remember when setting up signals:

- The more signals the better.
- Signals must be visible FROM THE AIR, LAND, AND SEA (e.g. can you see an SOS from a boat?).
- Signals must be large! How large is large? The U.S. Coast Guard recommendation for an SOS is 18 feet x 3 feet for each letter. Discuss how this would fit on a rocky or sandy beach and what will happen at high tide. An optional activity is to demonstrate 18 feet x 3 feet by making a large SOS in class from materials in the room.
- The rule of threes: Signals in sets of three convey a mes-

sage of distress. An SOS has three letters. Hang three piles of debris from trees or drift logs. Use three fires in a line—one fire will look like a campout, two will look like a beach party.

- Try to use contrasting colors: hang a life preserver or bright bandana.
- Signals with movement are effective in catching a searcher's eye.
- If you are using a fire as a signal, you must have someone on watch at all times, to keep it burning and to make sure it doesn't get out of control.
- Signals must stand out from the natural environment.

Discuss which signals are the best in these environments:

- Forest: whistles, bright colors, something reflective.
- Coastline: SOS, hanging debris, something reflective.
- From a boat: mirrors, bright colors, water dyes.

5. WATER "I need to avoid dehydration."

We can live only a few days without water.

Discuss how much water our bodies require each day for normal bodily functions. We need on the average 6-8 pints (3-4 quarts) depending on body size and health condition.

How much is 6 pints? Lots: 6 pints = 96 oz = 8 pop cans = 12 cups. How do we get fluids in our daily diet?—Milk, juice, etc.

What happens if we do not get enough water?

Dehydration (loss of body fluids) What are the symptoms?

- craving for cold or wet foods
- dark urine
- headache
- chapped lips
- feeling tired or dizzy
- depression—a potential killer in a survival situation

When we are dehydrated the body and mind do not function at maximum performance. Severe dehydration can lead to death. To combat dehydration we should:

- Avoid excessive activity such as hiking.
- Minimize food intake (food requires water for digestion).

Ask where we can find water in a survival situation. Answers may include ice, rainwater, rivers, creeks, ponds, muskeg, saltwater, and snow. (Write all answers on board.)

Ask if all these water types are safe. (NO! They are not.) Name some that are safe.

- Rainwater collected in a clean container.
- Prepackaged water (if you have it).
- Water that has been boiled for 20 minutes.

All other sources of water are not safe to drink. River or lake water should be boiled for 20 minutes to be guaranteed that all giardia and dysentery-causing microorganisms are killed. If you get dysentery while awaiting rescue, you will have diarrhea which will further dehydrate your body.

If you cannot start a fire to boil water, collect rainwater. If that is not possible, you must minimize activities to reduce body fluid loss and reduce or stop eating. In a survival situation, some people would rather drink river water and risk getting dysentery over being dehydrated.

Eating food when you are out of safe drinking water, and drinking water that could be contaminated are both risky choices that each individual may have to make. If you are thirsty you may chose to drink water from a fast moving stream. If you are out of water but hungry you may chose to eat juicy foods such as water-laden berries.

Seawater, urine, and blood are not considered safe sources of drinking water. They contain large amounts of salt and may contain other harmful microorganisms.

What can we use as a water collector? (Containers can be hard to find on a beach.) Plastic containers, ziploc bag, bark, clamshells, etc.

6. FOOD "Eat safe foods."

(If possible bring in a local wild foods expert)

There are three rules for foods in a survival situation:

- If you don't know it—don't eat it.
- If you don't have water—don't eat or eat very little.
- If possible eat several kinds of food (e.g. animals and plants).

It is good to get to know several foods that can be eaten in a survival situation during any season.

If you are lost along the coastal shores it will be easy to find an abundance of food. Almost all seaweeds are edible, as are one-shelled animals (limpets, etc.).

Edible small crabs and fish can be found by turning over rocks.

Discuss what might be found along nearby beaches and how the foods could be prepared for eating. This requires that the instructor have a familiarity with intertidal life.

Discuss Paralytic Shellfish Poisoning (PSP), also commonly called red tide, and the consequences of getting it in a survival situation (death). Ask the students the symptoms of PSP.

Some students may discuss the fact that their families eat clams, cockles, etc. Tell them that, even if they eat these foods at home, they should not eat them

in a survival situation! At home they can go to the hospital if they get PSP. But if a lost person eats PSP-contaminated clams, he or she will probably die.

PSP is caused by a neurotoxin that blocks nerve impulses resulting in respiratory failure. It is found in filter feeders or bivalves including clams, cockles, mussels, oysters, and scallops. Barnacles and the moon snail also carry PSP. Past information has stated that it is safe to eat barnacles. Emphasize to students that it is not.

Other shellfish to avoid include starfish, jellyfish, sponges, sea anemones, sand dollars, and the hairy triton.

For a person lost in the woods, different types of foods are available. Animals may be difficult to capture and kill. Snares could be used to trap small animals such as squirrels, rabbits, shrews, etc., but valuable energy can be wasted for a person who does not know what he or she is doing.

A multitude of edible plants can be found and eaten in a survival situation. In the spring leaves can be eaten, in the summer the berries, and in the fall and winter the roots. It is very important to learn which plants are safe to eat. There are poisonous berries, leaves, and roots in Alaska. Discuss edible leaves and berries. It is very important for the instructor to know which plants are safe to eat, but more important which plants are poisonous or can cause a sudden and severe illness. Remember: If you don't know it—don't eat it! You can live for weeks without food.

Ask students what they would eat in January, April, August, or December if lost in the woods or along a shore.

7. PLAY "Keep a positive mental attitude."

The last step in the Seven Steps to Survival is play. Play is important to maintain a Positive Mental Attitude and avoid depression.

Avoid depression, which destroys the will to survive. Keep yourself busy by improving your signals and shelter and collecting foods. Talking with each other will help minimize depression. Invent games and contests.

Ask what kinds of things can be done for play:

- Make the shelter better.
- Build more signals.
- Get water (build water collectors).
- Get food (try fishing, snaring).
- Tell stories.
- Make games.

Tell students: If you are alone, think about what you will do when you get home. If you are sitting around feeling sorry for yourself, get up and do something.

If you are with other people be sure to watch them to make sure they are not depressed or scared. Keep everyone busy and talking. TRY TO THINK LIKE A SURVIVOR, NOT LIKE A VICTIM.

HOW TO BUILD A FIRE

For the survival practical, the fire should burn for 10 minutes. This tells how to build a fire that will burn for longer than 10 minutes.

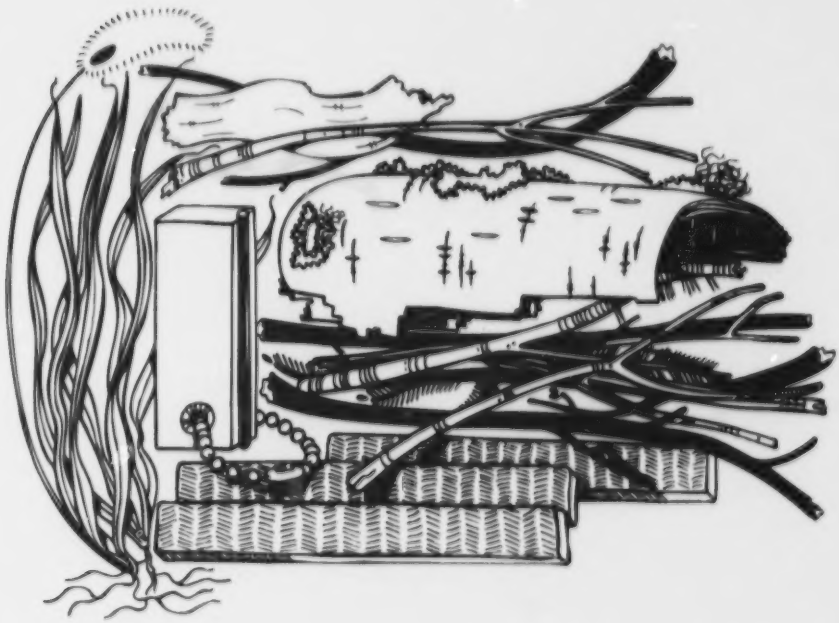
AIR, FUEL, and HEAT are needed to start a fire and to keep it going.

FUEL is anything that burns well such as logs, twigs, pitch from trees, plastic, or paper. Fuel includes tinder (small dry twigs, pitch, or grass), kindling (small branches or wood, no bigger around than your finger), and large fuel (driftwood or logs).

AIR or oxygen is necessary to ignite a fire and to keep it burning.

HEAT is supplied from the spark of a flint or by a match.

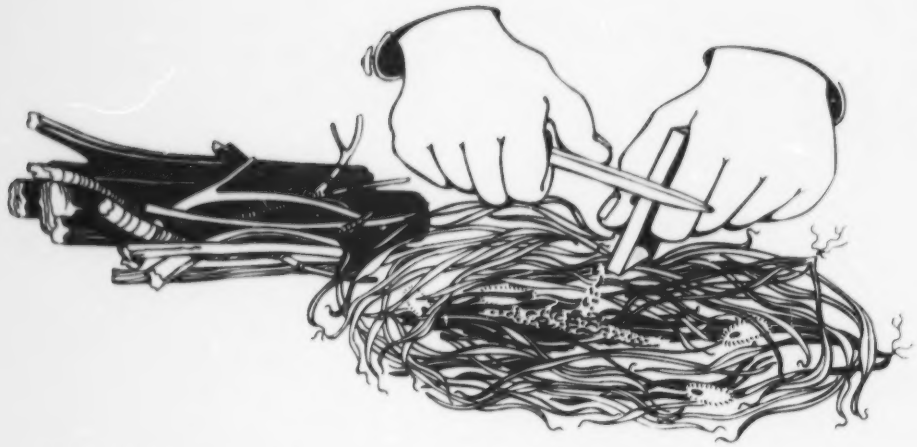
First locate a site sheltered from wind and rain. Collect enough tinder and kindling to supply a fire for at least 20 minutes and enough large fuel for the day.



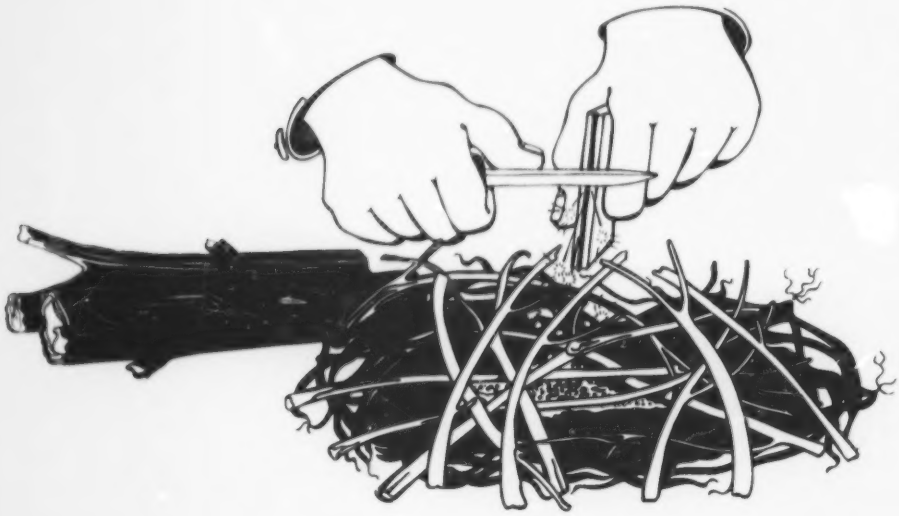
Arrange tinder to allow room for oxygen. Kindling can be crosshatched on top of tinder or stacked in a teepee shape. If a magnesium fire starter or other flint material are being used, add kindling sparingly after starting a flame.

Kindling should burn for several minutes before adding larger fuel. Do not smother the fire by adding too much fuel at one time. Larger fuel should also be added sparingly. A small fire is adequate to boil water or cook food.

Grass, twigs, birch bark, and fire sticks can be used for tinder. Fire sticks are wood sticks with paraffin.



Using a knife, shave pieces of magnesium starter onto tinder.



Strike the sparking edge of the magnesium starter to make sparks and get flames going.

TO SUMMARIZE

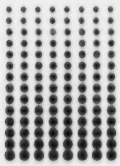
Review the seven steps and their importance:

1. Recognition: Accept the fact that you are in trouble.
2. Inventory: Find out what you have going for you and against you. Think about personal health needs, environment, and supplies.
3. Shelter: Anything that will protect you from the environment. First is your clothing. Second is a shelter that you construct, which must be small, insulative, and weatherproof.
4. Signals: You must be spotted to be rescued. A signal must attract attention and convey a message of distress.
5. Water: Avoid dehydration. Drink safe water—rainwater or boiled water.
6. Food: Eat only foods you know.
7. Play: Avoid depression, maintain a positive mental attitude.

Review steps in fire building.

Show the video that previews the Outdoor Survival Practical and Survival Suit Practical.

Give the Seven Steps to Survival Quiz if time is available. If the schedule is tight, give the quiz later.



STUDENT NOTE TAKING GUIDE

Name_____

Taking notes on this page during class discussion will help you learn what you need to know about survival.

Shelter

1. A _____ is anything that protects you from the environment.

2. Your primary shelter is your _____.

3. The way to dress for an outing is in _____. (long underwear, under wool clothes, covered by rain gear).

4. A wool _____ is essential, because you can lose up to _____ percent of your body heat without one.

5. An emergency shelter is something you can build to protect yourself from hypothermia. The three "musts" to a good shelter are:

   a.

   b.

   c.

6. How do you build a good shelter?

   a. Start with the _____. Use a layer of _____ 2-3 feet thick.

   b. On top of this, put at least one foot of _____.

   c. Next add a garbage bag or plastic sheeting.

   d. Then work on the top. Start with the frame, put three small poles over the _____. Tie the logs together with rope found along the beach, tree roots, bull kelp, plastic strips, or other material.

   e. Cover the frame with a cut open garbage _____ or other plastic.

   f. _____ goes on top of the frame.

   g. _____ goes on top of the branches.

7. How big should you make your shelter?

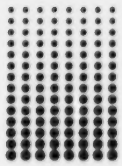
8. If you look inside the shelter and see _____ your shelter is not weatherproof and you need more _____.

9. What can you use for a door?

Shelter (continued)

10. Draw a picture of what your shelter might look like and label the parts.

STUDENT NOTE TAKING GUIDE



Signals

1. To help search parties find you, you can put up a _____, which is the fourth step to survival.

2. What two things must signals do to be effective?

   a. _____(let someone know where you are)

   b. _____ _____ (let them know you want to be rescued)

3. What are some possible items you can use to make signals?

4. What are some rules to remember when setting up your signals?

5. What signals are best for use in each of the situations listed below?

   Forest:

   Coastline:

   In the water:

6. To signal distress, _____ is the magic number.

7. Each letter in an SOS must be _____ feet high and _____ feet wide.

Water and Food

1. List two edible plants that are found in your region that you can find in:

Spring _____

_____

Summer _____

_____

Fall _____

_____

Winter _____

_____

Water and Food (continued)

2. List two poisonous plants found in your region.

   _____

   _____

3. Your body needs at least _____ pints of water every day.

4. To make creek water safe to drink, it must be _____ for _____ minutes.

5. If we do not get enough water to drink, our body will start to

   _____.

6. If you eat clams, cockles, or barnacles picked from Alaska's beaches you could die from _____.

Play

1. The last step in the seven steps to survival is _____.

2. Name two reasons why play is important.

3. What kind of things can you do for play?

4. Describe a game you could play if you were in a survival situation all by yourself, or one you could play if there were other people.

STUDENT NOTE TAKING GUIDE: WITH NOTES

Name_____

Shelter

1. A shelter is anything that protects you from the environment.

2. Your primary shelter is your clothing.

3. The way to dress for an outing is in layers. (long underwear, under wool clothes, covered by rain gear).

4. A wool hat is essential, because you can lose up to 75 percent of your body heat without one.

5. An emergency shelter is something you can build to protect yourself from hypothermia. The three "musts" to a good shelter are:

   a. small

   b. insulative

   c. weatherproof

6. How do you build a good shelter?

   a. Start with the bed. Use a layer of branches 2-3 feet thick.

   b. On top of this, put at least one foot of moss or grass.

   c. Next add a garbage bag or plastic sheeting.

   d. Then work on the top. Start with the frame, put three small poles over the bed. Tie the logs together with rope found along the beach, tree roots, bull kelp, plastic strips, or other material.

   e. Cover the frame with a cut open garbage bag or other plastic.

   f. Branches go on top of the frame.

   g. Moss goes on top of the branches.

7. How big should you make your shelter? Just big enough for you, or you and your companion.

8. If you look inside the shelter and see light, your shelter is not weatherproof and you need more moss or grass.

9. What can you use for a door? Branches, or plastic stuffed with moss.

10. Draw a picture of the shelter with labeled parts.

Signals

1. To help search parties find you, you can put up a signal, which is the fourth step to survival.

2. What two things must signals do to be effective?

   a. Attract attention (let someone know where you are)

   b. Give a message of distress (let them know you want to be rescued)

3. What are some possible items you can use to make signals?

   Driftwood, shells, rocks, grass, surveyor tape

4. What are some rules to remember when setting up your signals?

   Rule of three

   One by sea

   One by air

   The bigger the better

5. What signals are best for use in each of the situations listed below?

   Forest: Mirror, surveyor tape, whistle

   Coastline: SOS, surveyor tape, mirror, hanging debris

   In the water: Mirror, whistle, something bright

6. To signal distress, 3 is the magic number.

7. Each letter in an SOS must be 18 feet high and 3 feet wide.

Water and Food

1. List two edible plants that are found in your region that you can find in:
   (This varies with region)

Spring — Fern fiddleheads

Seaweeds

Summer — Goosetongue

Berries

Fall — Berries

Seaweed

Winter — Wild potato

Indian rice

2. List two poisonous plants found in your region.
   (This varies with region)

   Baneberry

   Poisonous water hemlock

   False hellebore

3. Your body needs at least 6-8 pints of water every day.

4. To make creek water safe to drink, it must be boiled for 20 minutes.

5. If we do not get enough water to drink, our body will start to dehydrate.

6. If you eat clams, cockles, or barnacles picked from Alaska's beaches you could die from PSP.

Play

1. The last step in the seven steps to survival is play.

2. Name two reasons why play is important.

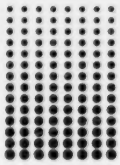
   Maintain a positive mental attitude (prevent depression)

   Combat hypothermia

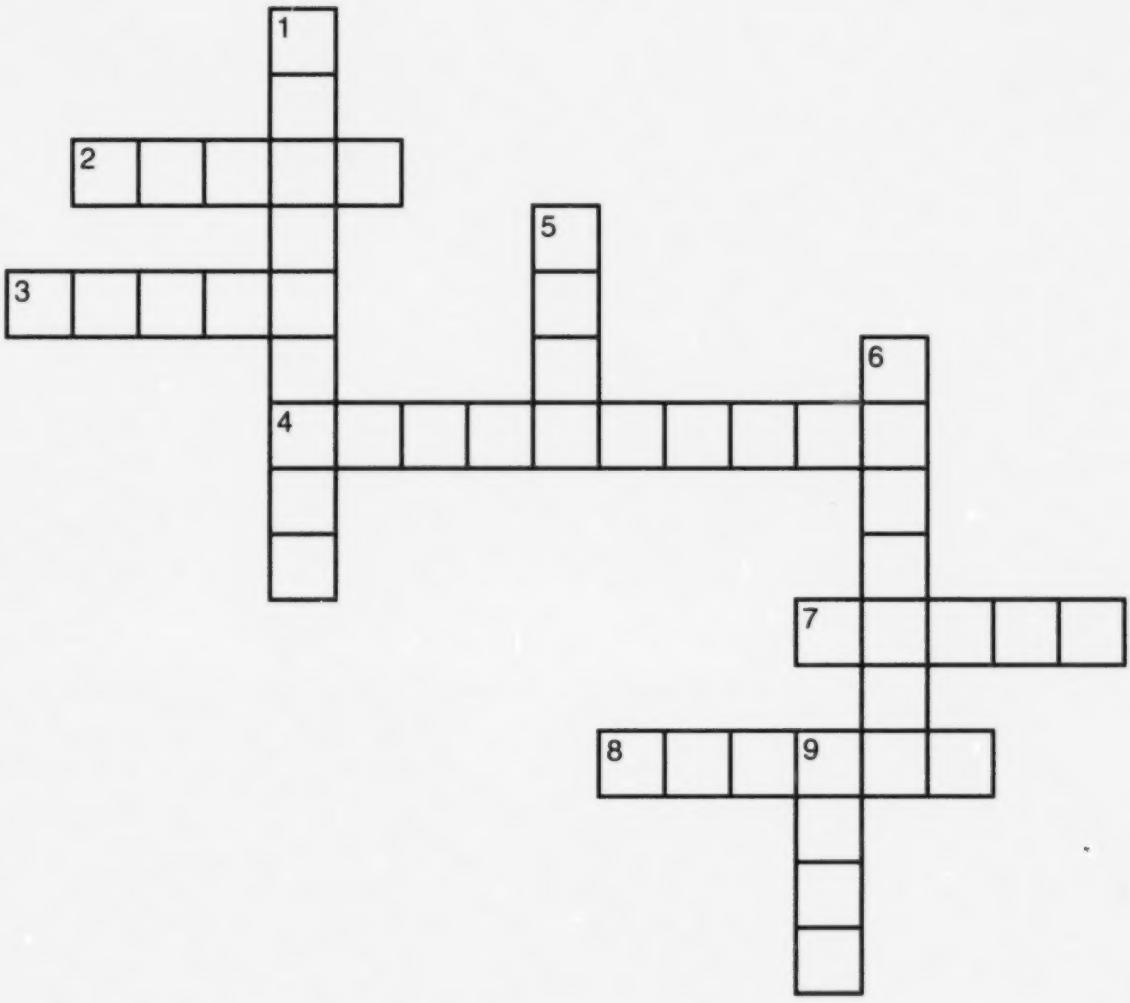
3. What kind of things can you do for play?
   (This varies)

4. Describe a game you could play if you were in a survival situation all by yourself, or one you could play if there were other people.

SURVIVAL CROSSWORD PUZZLE



1. A first sign of hypothermia
2. Best survival tool
3. _____ (number) of anything will signal for help
4. A shelter must be small, _____, and weatherproof
5. A fabric that keeps you warm even when it is wet_____
6. A signal must attract attention and send a _____
7. You can go without _____ for 3-4 days
8. An edible sea animal with one shell
9. Depression can be avoided by _____

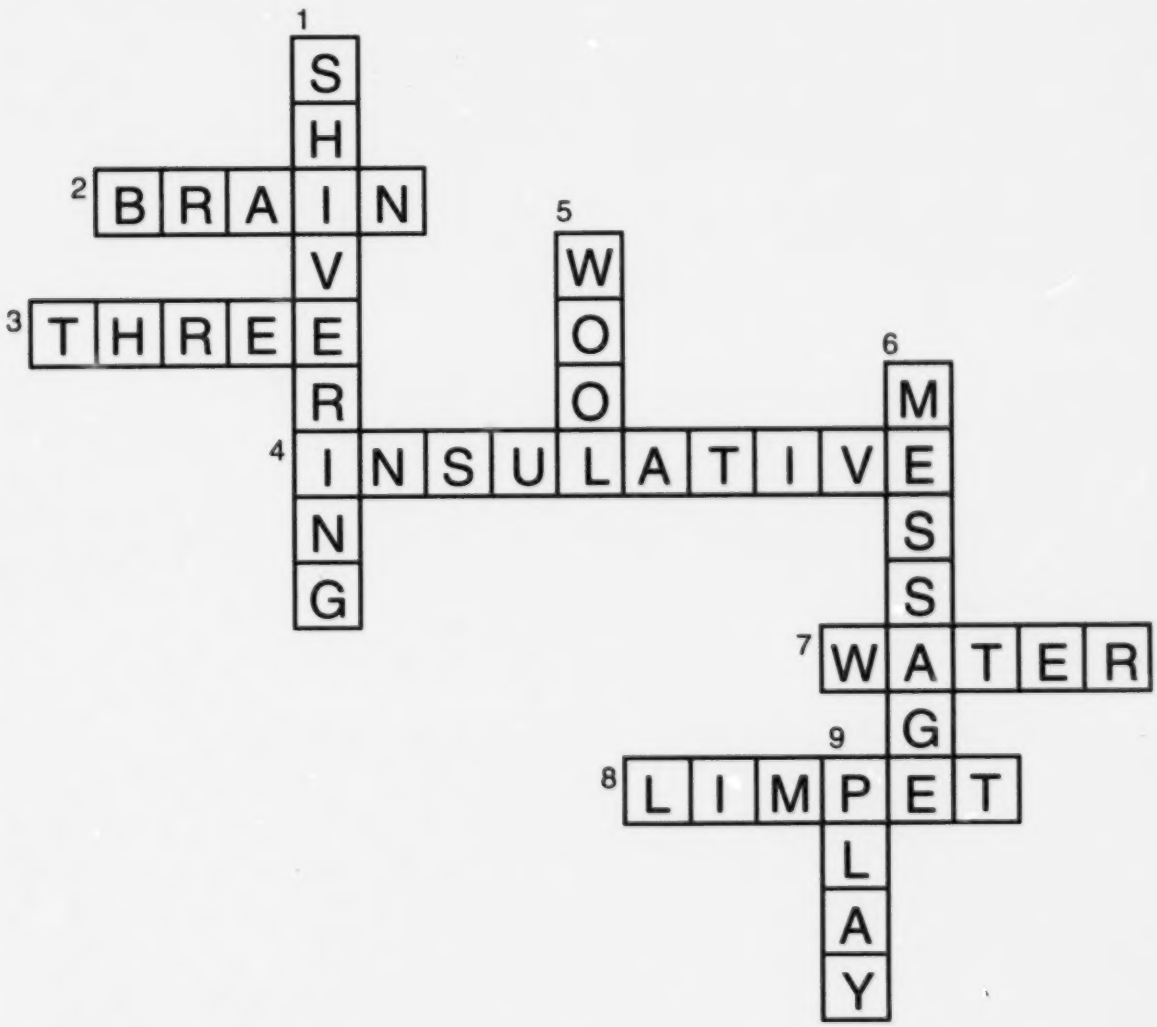


SURVIVAL CROSSWORD PUZZLE: WITH ANSWERS

1. A first sign of hypothermia
2. Best survival tool
3. _____ (number) of anything that will signal help
4. A shelter must be small, _____ and weatherproof
5. A fabric that keeps you warm even when it is wet_____
6. A signal must attract attention and send a _____
7. You can go without _____ for 3-4 days
8. An edible sea animal with one shell.
9. Depression can be avoided by _____

ANSWERS

1. shivering
2. brain
3. three
4. insulative
5. wool
6. message
7. water
8. limpet
9. play



Shore Survival

Alaska's youth spend a lot of time on the water and along the shoreline. While most outdoor adventures—hiking, boating, fishing, picking berries, or traveling by boat or plane—are filled with excitement and discovery, tragedy can strike at any time.

Be Prepared

In preparing for an emergency you must think "It can happen to me." Be prepared: otherwise, you won't have the necessary equipment or skills to face an unexpected emergency. Preparation includes:

1. developing a positive mental attitude,
2. being mentally tough, and
3. being physically prepared by having good health, the proper survival equipment and the proper survival skills.

Mental Preparation

In developing the proper mental attitude you must:

1. accept the fact that it can happen to you,
2. realize that what you are carrying with you may be all you have in an emergency,
3. develop a will to survive and conquer fear.

Someone who is lost or tossed into an emergency situation may panic. Fear, cold, and being tired, hungry, or thirsty are all normal feelings in an emergency situation. You must learn to conquer these feelings and develop an attitude that you will survive.

Physical Preparation

Physical preparation includes:

1. your health,
2. your survival skills, and
3. your equipment.

Don't go out adventuring in the woods or on the water if you are not in good health. Develop survival skills so that you feel prepared in the woods. Be sure to have necessary survival equipment with you.

Make a Plan

Before you go anywhere along the beach, in the woods or on a boat you must make a plan:

1. Check the weather forecast. Will it be sunny or stormy?
2. Know where you are going, the route you will be taking and how long it will take to get there and come back—and be sure to tell someone your plans.
3. Never travel alone, especially if you don't know the area well. It's best to travel in threes.
4. Take proper clothing with extra mittens, socks, rain gear, a survival kit and first aid supplies. Dress in layers using wool or polypropylene. Your survival kit should be small enough to carry on you.

Seven Steps to Survival

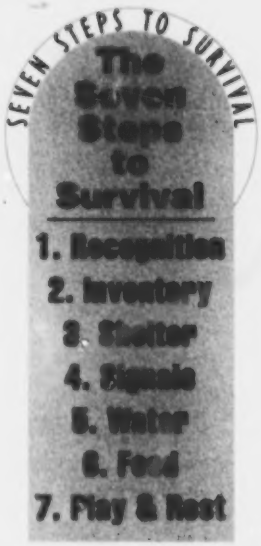
Part of the mental and physical preparation for anyone planning to spend time outdoors is learning the Seven Steps of Survival. Once you learn the Seven Steps you will know how to face a survival situation and will have learned skills necessary to prepare yourself to survive.

First Step: Recognition

If you're not sure that you are lost or in trouble, assume you are and take action. Many people fail to recognize

Reprinted from an article by Dolly Garza in the Marine Advisory Program Alaska Marine Resource Quarterly, Vol. II No. 1, 1987

that they are in trouble and many have died because they were too "tough" to accept this fact.



Second Step: Inventory

Once you admit to yourself that you are lost or in trouble, then the next step is to inventory the situation. To inventory, first respond to any major first aid needs.

Second, get yourself and others out of the rain and wind.

The third part of inventory is to see what you can use that can help you stay alive. Inventory what you have in your pockets, and what you can find along the beach or in the woods that can be used for signals, to build a shelter or a fire, and to gather water and food. Use your skills and your brain.

Third Step: Shelter

People who die in survival situations generally die from one of two causes—drowning or hypothermia. Your primary shelter is your clothing. When you get ready to go on an outing, dress for the worst weather.

You can make several kinds of shelters depending on the situation and the environment you are in. A shelter must do two things:

1. It must insulate you on all sides from the cold.
2. It must be small and snug to keep the wind and wet out.

In selecting a place to build your shelter, try to find some place out of the wind and rain. Be sure your site has good drainage.

The materials you use will depend on what is available: grasses, branches, moss, logs, and garbage found along the beach are commonly used.

Fourth Step: Signals

You can help search parties find you by putting up signals. Signals must do two things:

1. They must attract attention.
2. They must send a message.

There are two kinds of signals—active and passive. Passive signals are signals that work without you. Examples of passive signals are lights, reflectors (mirrors, aluminum foil), wreckage, or an SOS from driftwood. Active signals are signals that you have to operate: fires or smoke, hand-held signal mirrors, or whistles.

You should have several signals—the more the better—because your signal must send messages in two directions. You need signals that can be seen from the air (fires, a driftwood SOS, wreckage or reflectors). You also need signals visible from the ground or from a boat (hanging reflectors, hanging bright surveyor tape or debris).

When building signals remember the rule of threes. Sets of threes are a universal distress signal. If you have only one fire, Search and Rescue might think that you are merely camping.

- If rescuers see three fires they know it is a rescue signal.
- If you arrange driftwood as a signal, create three straight lines of wood (and make sure they are above the high tide line).
- If you blow your whistle, blow three short whistles, then wait, and then blow three again.
- If you hang wreckage in trees, hang three piles about 15 to 20 feet apart.

Fifth Step: Water

On the average, people need six pints of water every day to keep their bodies running.

If you don't get enough water you will dehydrate. Signs of dehydration include a headache, chapped lips, feeling run down or tired, depression, a craving for things that are cold (like ice cream), and dark urine.

In a survival situation, water can be obtained from several sources including rainwater, rivers or creeks, lakes, ponds, and snow or ice. Rainwater is the only water safe to drink without being boiled. Water obtained from any other source must be boiled for 20 minutes. There are a host of microscopic organisms in water from ponds, creeks, snow, etc., that can make you sick. Giardia, or "beaver fever," and dysentery can make you very sick.

If you use snow or ice, melt it before you use it. Liquids to avoid include seawater, blood, and urine.

Sixth Step: Food

Food is used for producing body energy, for heat production (to keep you warm), for tissue repair, for proper mental functions (so you can think straight) and for comfort and a sense of well being.

Remember—don't eat anything unless you have water to drink. You need water in order to digest food. If you don't drink water when you eat, your body will dehydrate. Your body can, however, survive for days without water and weeks without food.

Try to balance your diet by eating both plants and animals. But, with both plants and animals, if you're not sure—don't eat it!

The seashore provides a wealth of sea plants or seaweeds and animals at low tide. But you must be careful to stay clear of all bivalve shellfish as they may have paralytic shellfish poisoning (PSP). Microscopic dinoflagellates, which are eaten by bivalves, carry this poison. The poison can kill people, even though it doesn't kill the shellfish.

Bivalve (two-shell) shellfish include clams, cockles, mussels, scallops, oysters, and geoduck. Even if you eat these at home, do not eat them in a survival situation. Barnacles and the moonsnail may also have PSP and should be avoided.

The following is a list of good nutritional foods found along the seashore:

- limpets
- small snails
- sea urchin eggs
- hermit crabs
- gumboots/chitons
- sea cucumber
- abalone

Some of the fishes you can eat:

- flat fish
- herring
- blennies
- salmon
- rockfish
- smelt
- bullheads (not the eggs)

Most seaweeds, including the brown, the red and the green are all excellent sources of vitamins and minerals.

While most land animals are edible they take more time and energy to get, so it is usually best to stick to easily available sea life. Mink, marten, squirrels, rabbits, birds, and mice are all safe small game animals. Try to balance your diet by eating plants also.

There are lots of land plants to eat—but remember, if you're not sure don't eat them. Learn which berries and plants are poisonous. It is important to spend time learning about local plants and animals in your area so that if you find yourself in a survival situation you will know what you can eat and what to avoid.

Seventh Step: Play

Play keeps you busy so you don't become bored or scared, and play helps you keep a positive mental attitude. Make it a point to spend some time at storytelling, baseball or other games. Non-play activities—such as working on your shelter or looking for food and water—can help keep moods positive, too. Remember that inactivity can be a sign of depression or fear; so, if you are with others, do your best to help keep them active.

Summary

In summary, knowing the Seven Steps to Survival will provide you with the knowledge and some helpful skills necessary in a survival situation. Prepare yourself before you leave home. Build yourself a survival kit that you will use, and take it with you whenever you head into the wilderness.

Survival Stew

If you are boiling water for 20 minutes you can make a nutritious stew by adding seaweeds, limpets and snails into the water during the last five minutes of boiling. The meat from the small shellfish should separate from the shell. The vitamin and mineral rich broth and the shellfish meats and seaweeds are safe and nutritious.

Giardia

Reprinted from an article by the Alaska Department of Environmental Conservation

It's called "backpackers disease," "beaver fever," or giardiasis, and each year an increasing number of wilderness travelers suffer from its unpleasant symptoms. Before you quench your thirst from a clear Alaska stream, consider the following information about Giardia lamblia parasite—and how to avoid it.

WHAT IS GIARDIASIS?

Giardia lamblia is found worldwide and is the most commonly reported human intestinal parasite in the United States. Although the cyst can be transmitted on food and from person to person, its most frequent transmission is through surface water that is either untreated or inadequately treated. In treated water, either inadequate chlorination or defective filters or both have been responsible for large outbreaks of the disease nationwide.

WHAT ARE THE SYMPTOMS?

Abdominal bloating, cramps, excessive gas, diarrhea and a vague feeling of physical discomfort are typical. The incubation period after ingesting the cysts is one to four weeks with an average of 10 to 14 days.

If you have any combination of the above symptoms, especially if they continue longer than seven days, you should consult your physician and mention the possibility of giardiasis so that appropriate tests can be done. Diagnosis is confirmed by stool examination.

HOW DO YOU CONTRACT THE DISEASE?

Follow-up on many cases in Southcentral Alaska revealed that the victims had consumed untreated surface water, usually on camping or fishing trips.

The parasite is carried by all mammals, including humans and wild and domestic animals. Beavers seem particularly susceptible to giardia infections and carry large numbers of cysts in their intestines. The feces of carrier animals contain cysts which live outside the host The cysts reach water drainage systems either by direct deposits into the water, as in the case with beavers, or indirectly by rain and runoff.

Giardiasis is usually passed between humans as a result of poor sanitary practices. Young children who become infected may reinfect themselves or others. Typically, children may neglect to wash their hands after a bowel movement. Later their fingers reach their mouths while they are eating or playing, and the cysts are reintroduced into their intestines.

Those who handle babies and change diapers, such as day care workers, must also be cautious about washing their hands to avoid passing cysts to others.

TREATMENT

Treatment for humans involves use of properly prescribed drugs for seven to ten days. The drugs may produce side effects, and care must be observed in their use by pregnant women and possibly others. Treatment should be prescribed by a doctor.

There is a catch to the treatment of this unpleasant disease. From 85% to 90% of patients are cured with one course of medication. The 10% to 15% who are not must take a second course of treatment.

PREVENTION

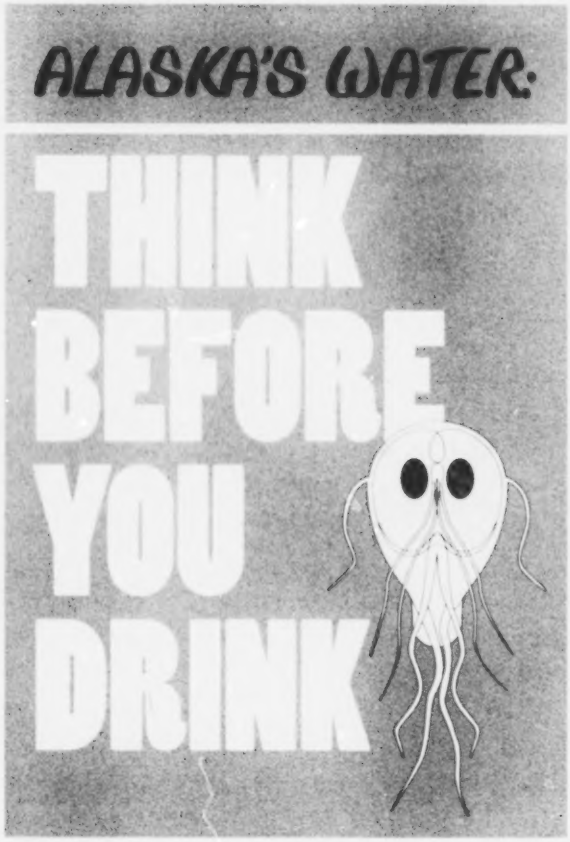
Whenever possible, people in the out-of-doors should carry drinking water of known purity with them. When this is not practical, and water from streams, lakes, ponds, and other outdoor sources must be used, time should be taken to disinfect the water before drinking it.

BOILING WATER

Except for water treatment methods that include adequate filtration, boiling is the only technique that can be recommended with complete confidence for eliminating giardia in water. Boiling for one minute is adequate to kill giardia. If other upstream contamination is suspected (from places of human habitation, sewage outfalls, etc.), the water should be boiled for 20 minutes.

CHLORINE OR IODINE DISINFECTION

Although boiling is the most reliable method of water disinfection, it is recognized that boiling drinking water is not practical under many circumstances. Therefore when one cannot boil water, chemical disinfectants such as io line or chlorine should be used. This will provide a large degree of protection against giardia and will destroy



most bacteria and viruses that cause illness.

The effectiveness of chlorine and iodine against giardia has been studied by researchers at the University of Oregon. They have shown that chlorine and iodine can be effective against giardia cysts under certain circumstances. The effectiveness decreases as water gets colder. Cloudy or turbid water also decreases the effectiveness of chlorine and iodine. To counteract these effects, the contact time (holding time) after the disinfectant is added should be increased.

Following are instructions for disinfecting water using household tincture of iodine or chlorine bleach. If water is visibly dirty, it should first be strained through a clean cloth into a container to remove any sediment or floating matter. Then the water should be treated as follows:

Chlorine

Household liquid chlorine bleach (Clorox, Purex, etc.) usually has 4% to 5% available chlorine. Read the label to find the percentage of chlorine in the solution. Chlorine tablets (Halazone) are also available through many drug stores.

Mix thoroughly by stirring or shaking water in container and let stand for 30 minutes. For chlorine tablets, contact time begins after tablets have dissolved. Be sure screw tap threads of your water container receive disinfected water for the appropriate contact time. The water should have a slight chlorine odor after standing. If it does not, repeat the dosage and let stand for an additional 30 minutes before using.

% Chlorine (undiluted)	Amount per quart (1 drop = 0.05 ml)	Contact time
1%	20 drops	30 minutes
4-6% (household bleach)	4 drops	30 minutes
7-10%	2 drops	30 minutes
Unknown %	20 drops	30 minutes
Halazone	2 tablets	30 minutes

Note: Very cold or turbid water will require prolonged contact time. Let it stand up to several hours or even overnight.

Iodine

Tincture of iodine from the medicine chest or first aid kit can be used to treat water. Iodine disinfecting tablets are also available. Mix thoroughly by stirring or shaking water in container and let stand for 30 minutes. For iodine tablets, contact time begins after tablets have dissolved. Be sure screw cap threads of your water container receive disinfected water for the appropriate contact time.

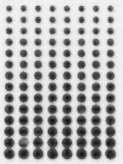
	Amount per quart (1 drop = 0.05 ml)	Contact time
Tincture of iodine (2%)	10 drops	30 minutes
Iodine tablets (Potable Aqua, Globaline, Coughlans, etc.)	2 tablets	30 minutes

Note: Very cold or turbid water will require prolonged contact time. Let stand up to several hours or overnight.

WATER FILTERS

Portable filtration devices that are effective against Giardia are those with pore sizes less than five micrometers (one micrometer is one millionth of a meter). Water pressure will be required to use filters with pore openings of this size. Water filters containing resins or activated carbon granules without microfilters with pore sizes less than five micrometers will probably not filter out giardia cysts.

SEVEN STEPS TO SURVIVAL QUIZ



Name _____

There are seven steps for survival at sea or on the shore. Fill in the blanks with the following steps, in order from most important to least important.

STEPS: Signal, Shelter, Play, Recognition, Water, Inventory, Food

1. _____ Understand and accept that you are in a life-threatening situation and must act to save yourself.
2. _____ Take stock of what you have, so you are better prepared to act in your situation.
3. _____ You must protect yourself from loss of body heat which might lead to hypothermia.
4. _____ Ask for help.
5. _____ This is necessary to protect your body from dehydrating.
6. _____ This is important if rescue is not available for a long time.
7. _____ Constructive activity keeps up the will to live and improves your chances of survival.

Read the following questions carefully and provide answers.

8. Your primary "shelter" is your clothing. Check 4 items that are best in a survival situation.

   _____ cotton jeans and cotton T-shirt

   _____ hat

   _____ extra socks

   _____ wool pants and wool sweater

   _____ rubber boots

   _____ tennis shoes

9. Hypothermia is the lowering of the _____ of the body's core.

10. A good shelter must be small, _____, and weatherproof.

11. One way of signaling for help that is visible from the sea is (circle the correct answer):

    a. SOS

    b. Hanging debris

12. Describe one way of signaling for help that is visible from the air.

13. To signal distress, _____ is the magic number.

14. To keep healthy, your body needs at least ___ pints, or three quarts of water every day.

15. To make sure creek water is safe to drink you must _____ it for _____ minutes.

16. List two plants in your region that are edible.

_____

_____

17. List two poisonous plants found in your region.

_____

_____

18. Give two examples of "play" activities you could do if you were stranded with at least one other person.

19. Give two examples of how you would keep a positive mental attitude if you were stranded by yourself.

20. A survival kit should be located on/in your (circle the correct answer):

a. boat

b. body

c. backpack

21. Draw a diagram of a one-person survival shelter you might build on the beach using available materials. Label the layers of material in the floor, walls, and roof.

SEVEN STEPS TO SURVIVAL QUIZ: WITH ANSWERS

Name _____

There are seven steps for survival at sea or on the shore. Fill in the blanks with the following steps, in order from most important to least important.

STEPS: Signal, Shelter, Play, Recognition, Water, Inventory, Food

1. Recognition. Understand and accept that you are in a life-threatening situation and must act to save yourself.
2. Inventory. Take stock of what you have, so you are better prepared to act in your situation.
3. Shelter. You must protect yourself from loss of body heat which might lead to hypothermia.
4. Signals. Ask for help.
5. Water. This is necessary to protect your body from dehydrating.
6. Food. This is important if rescue is not available for a long time.
7. Play. Constructive activity keeps up the will to live and improves your chances of survival.

Read the following questions carefully and provide answers.

8. Your primary "shelter" is your clothing. Check 4 items that are best in a survival situation.

_____ cotton jeans and cotton T-shirt

__X___ hat

__X___ extra socks

__X___ wool pants and wool sweater

__X___ rubber boots

_____ tennis shoes

9. Hypothermia is the lowering of the temperature of the body's core.

10. A good shelter must be small, insulative, and weatherproof.

11. One way of signaling for help that is visible from the sea is (circle the correct answer):

a. SOS

b. Hanging debris

12. Describe one way of signaling for help that is visible from the air.

    SOS on the ground, mirror, surveyor tape

13. To signal distress, three is the magic number.

14. To keep healthy, your body needs at least 6 pints, or 3 quarts of water every day.

15. To make sure creek water is safe to drink you must boil it for 20 minutes.

16. List two plants in your region that are edible.
    (This answer varies with region)

17. List two poisonous plants found in your region.
    (This answer varies with region)

18. Give two examples of "play" activities you could do if you were stranded with at least one other person.
    (This answer varies)

19. Give two examples of how you would keep a positive mental attitude if you were stranded by yourself.
    (This answer varies)

20. A survival kit should be located on/in your (circle the correct answer):

    a. boat

    b. body

    c. backpack

21. Diagram a one-person survival shelter you might build on the beach using available materials. Label the layers of material in the floor, walls, and roof.

CHAPTER 3
SURVIVAL KITS

GOAL

To impress upon students the value of survival kits and the need to carry them.

OBJECTIVES

The students will be able to:

1. Tell where a survival kit should be located.
2. Tell the differences between a personal survival kit and a comfort kit.
3. List the three requirements for the contents of a personal survival kit.

MATERIALS AND EQUIPMENT

Instructor should have a variety of survival kits and survival kit items on display. The Supplies to Buy list shows materials needed for student kit assembly. A magic marker or other means of labeling the kits with the students' names is also needed.

PRESENTATION PLAN

This is a hands-on lesson. First show some kits and contents and hold a brief discussion on survival kits (vs. comfort kits). Then ask students to assemble personal survival kits.

WHAT IS A SURVIVAL KIT?

Display survival kit items.

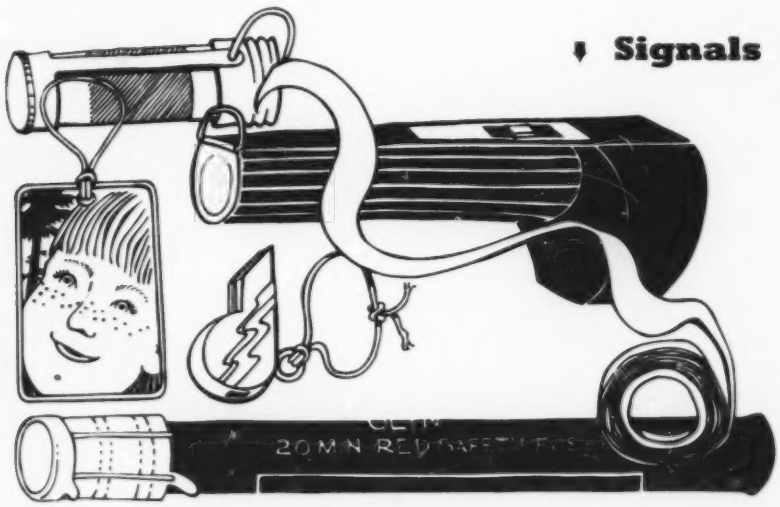
A personal survival kit is a set of items that a person uses to survive an emergency. A personal survival kit IS NOT A SURVIVAL KIT UNLESS IT IS ON YOU! It must be small enough to fit in a pocket. Small children, who do not have pockets big enough to hold a survival kit, can use a waterproof pouch with a string attached to it so the kit goes around the neck. The survival kit container should be as waterproof as possible.

A comfort kit is a set of items that can assist in an emergency. Some people call it a survival kit but it is not located on the body. A comfort kit may be in a backpack or on a boat, and can easily be lost in the woods or go down with the boat (where it will not be of any help).

The contents of a survival kit are very important. It is impossible to include every item that may be needed in a survival situation, hence decisions have to be made. The Survival Kit Items list includes things from which to choose. Care must be taken in deciding which items to include. Ask students to guess the three essential ingredients in a survival kit:

1. Shelter: garbage bags, emergency space blankets, nylon cord or twine.

2. Signals: mirror, whistle, surveyor tape, flares, cyalume lightstick.



3. Personal health considerations: medications, bug repellent.

The items in a survival kit vary depending on personal needs, the season, and where it will be used. Everyone's survival kit will be different. Discuss how a hiker's survival kit might differ from a boater's survival kit. Discuss how survival kit items could be used.

SURVIVAL KIT CONTAINERS

Survival kit containers vary but should meet two criteria:

- Small
- Waterproof (or semi-waterproof)

Discuss various options—ziploc freezer bags, plastic soap containers, waterproof pouches, bandage boxes, etc.

BUILDING A SURVIVAL KIT

While discussing survival kit items and containers, hand out the survival kit items for the student kits. Begin with the pint size ziploc bags. Have each student put his or her name on the bag with a magic marker (the kits will all look similar out in the field).

Have students work together to dispense items. Working together will be a little chaotic but fun for the students. Two students can cut lengths of twine 2 times their outstretched arm. Let them know that they may add other items to their kit as long as they fit in the kit. Also tell them about any restrictions against items such as knives.

In addition to a survival kit, a wool or polypropylene hat is essential. An eight-inch hunting knife is nice to have but may not be appropriate for younger children.

Survival Kit ↓

SURVIVAL KIT ITEMS

These things are essential for the survival kit.

- **Shelter**
  - Two large plastic garbage bags or tube tent
  - Nylon parachute cord or strong twine (20 feet)
- **Signals**
  - Signal mirror
  - Whistle
  - Surveyor tape
  - Heavy duty aluminum foil
  - Magnesium fire starter
  - Matches (waterproof and windproof)
  - Fire starting materials (waxed wood)
- **Tools**
  - Sturdy pocket knife or hunting knife
- **Personal Health**
  - Prescription drugs if necessary

Remember that a good insulative hat is essential!

Consider taking these things along, either in your survival kit or somewhere on your body.

- **Shelter**
  - Wool hat
  - Thermal foil blanket (space blanket)
  - Rain suit (jacket and pants)
  - Plastic sheeting
  - Extra clothes
  - Brightly colored cloth
- **Signals**
  - Cyalume chemical light sticks
  - Extra aluminum foil, heavy duty
  - Battery powered EPIRBs (Emergency Position Indicating Radio Beacons)
  - Emergency strobe lights
  - Fluorescent water dyes
- **Health**
  - Bandaids
  - Compresses (for bleeding)
  - Triangular bandage
  - Chapstick
  - Aspirin
  - Disinfectant
  - Insect repellent
  - Personal items: feminine hygiene supplies, vitamins, etc.
- **Food and water**
  - Chocolate bars and hard candies
  - Instant cocoa
  - Packaged water
  - Water purification tablets (iodine or Halazone)
  - Ziploc freezer bags (for holding food and water)
  - Fruit bars
  - Powdered bouillon (salt free)
  - Coffee or herbal tea
- **Fire and light**
  - Flint starter kit
  - Waterproof flashlight
  - Candles
- **Tools**
  - Compact pocket saw
  - Duct tape
  - Cable snares or small gauge wire
  - Fish line
  - Fish hooks
  - Magnetic compass

SUPPLIES TO BUY

The instructor or students should buy these supplies for making survival kits. Prices are included. Items are available at variety stores such as Fred Meyer.

• Container	
- Ziploc bags, one-pint freezer bags, one per student	$2.59 for a box of 25
• Shelter	
- Heavy weight garbage bags, two per student	$4.50 for a box of 20
- Nylon parachute cord, three to six feet per student	$1.95 for 50 feet
• Signals	
- Whistle, one per student	$2.00 each
- Surveyor tape, yellow or orange, two to four feet per student	$3.00 per roll
- Aluminum foil	$4.00 per box
• Food	
- Hard candy, one or two pieces per student	$2.59 per package
• Fire	
- Magnesium fire starter or flint starter, one for each group of four for the outdoor practical	$4.00-7.00 each, OR
- Waterproof matches, one box per student	$1.50 per package of four
- Fire starting materials (waxed wood, such as "fire sticks")	$1.50 per package

The following materials are nice to have but are not essential for this class.

- Signal mirror, small plastic (hard to find) or glass, one per student	$3.00-10.00 each
- First-aid supplies	cost variable
- High energy food	cost variable
- Candles (can be shared)	$2.00 for six
- Flint box (fire starter)	$4.00
- Cyalume chemical light sticks (for night signals)	$2.00
- Pocket knife	$10.00
- Compact pocket saw	$2.50
- Fish line and hooks	cost variable

SURVIVAL KIT QUIZ

After raining and blowing for the last two weeks it has finally cleared up. You, your brother, and your dad have decided to head out and hunt for the day. You tell mom where you are going but once out on your boat you all decide to go to another bay.

You've been hunting the low muskegs all morning with no luck. Your brother and you decide to hike up the mountainside. Dad decides to stick around the muskeg. You agree to rendezvous in three hours, and leave your backpacks at your temporary camp because you don't want to pack them up the mountain.

Halfway up the mountain you spot a deer. Your brother shoots and injures it and the two of you begin following the trail of blood. After several hours you give up on finding the deer. You look around and realize that you are not sure where you are. It is getting late and you are overdue for your rendezvous with your dad. You do not know which direction to go to get back. Your hand-held radio is in your backpack back at camp. It is now too dark to hike out.

You and your brother recognize that you are lost and must survive the night in the woods. You inventory your situation and the equipment and resources you have.

Listed below are 15 items. You can have only 10 of them between the two of you. You must decide which 10 would be the best to have and prioritize the items.

	Necessary (mark 10 items)	Priority Rating (rate top 10: 1 highest rating 10 lowest rating)
Space blanket	_____	_____
Cigarette lighter	_____	_____
2 garbage bags	_____	_____
Extra wool socks	_____	_____
Deer call	_____	_____
Aluminum foil	_____	_____
Jerky	_____	_____
Flashlight	_____	_____
Cigarettes	_____	_____
2 wool hats	_____	_____
Flask of koolaid	_____	_____
Surveyor tape	_____	_____
Compact saw or 8" hunting knife	_____	_____
Set of keys	_____	_____
Magnesium fire starter	_____	_____
Steel wool	_____	_____

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SURVIVAL KIT QUIZ: WITH ANSWERS

After raining and blowing for the last two weeks it has finally cleared up. You, your brother, and your dad have decided to head out and hunt for the day. You tell mom where you are going but once out on your boat you all decide to go to another bay.

You've been hunting the low muskegs all morning with no luck. Your brother and you decide to hike up the mountainside. Dad decides to stick around the muskeg. You agree to rendezvous in three hours, and leave your backpacks at your temporary camp because you don't want to pack them up the mountain.

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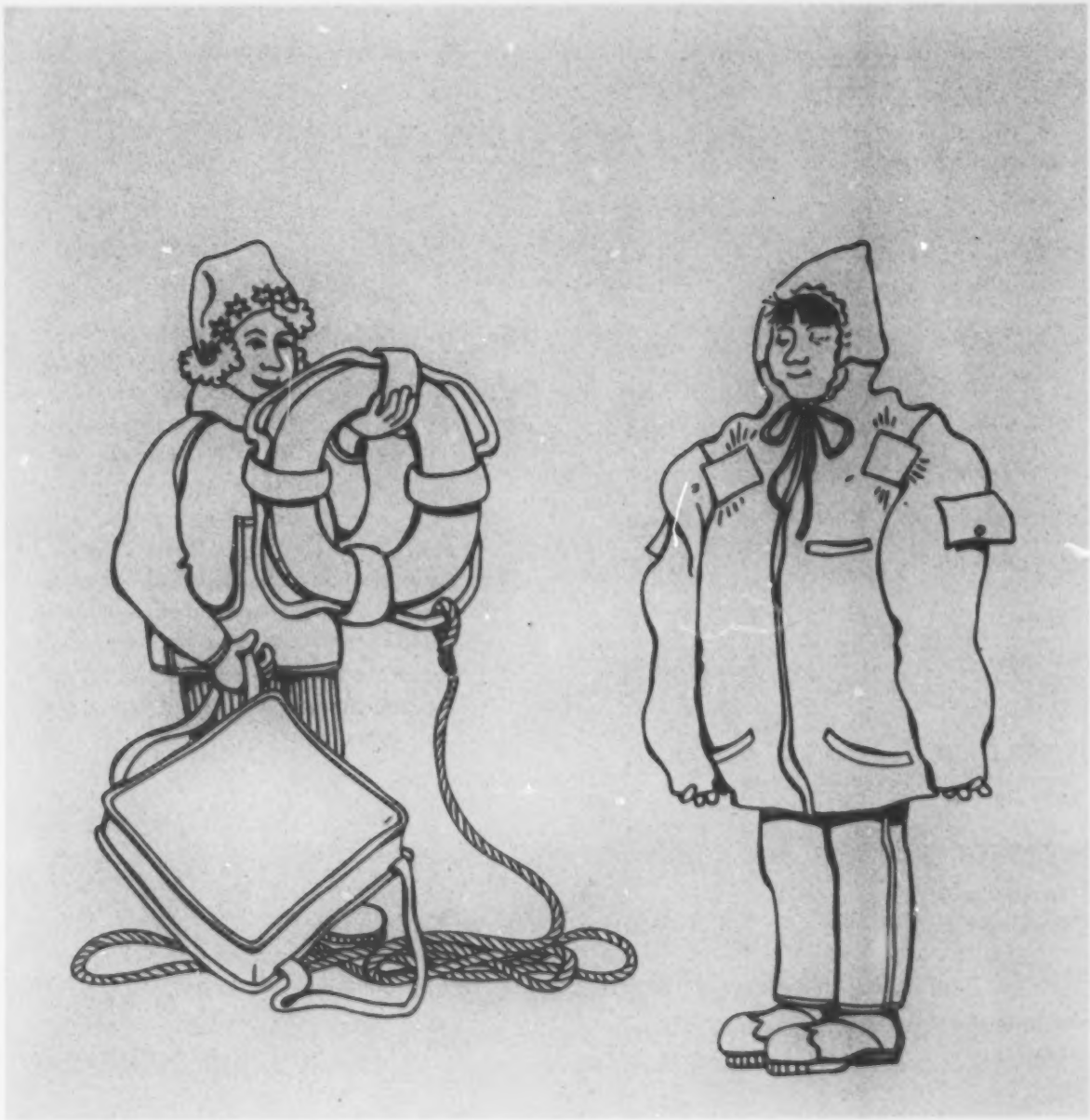
You and your brother recognize that you are lost and must survive the night in the woods. You inventory your situation and the equipment and resources you have.

Listed below are 15 items. You can have only 10 of them between the two of you. You must decide which 10 would be the best to have and prioritize the items.

	Necessary	Priority Number
Space blanket	X	2, 3, 4
Cigarette lighter		0
2 garbage bags	X	2, 3, 4
Extra wool socks	X	2, 3, 4
Deer call		0
Aluminum foil	X	5, 6, 7, 8, 9
Jerky		0
Flashlight	X	5, 6, 7, 8, 9
Cigarettes		0
2 wool hats	X	1
Flask of koolaid	X	5, 6, 7, 8, 9
Surveyor tape	X	5, 6, 7, 8, 9
Compact saw or 8" hunting knife	X	5, 6, 7, 8, 9
Set of keys		0
Magnesium fire starter	X	10
Steel wool		0

Priority ratings may vary from person to person, and ratings can be debated. Getting the 10 necessary items and the top four priority items are most important. To protect the body from further heat loss, a wool hat, insulative socks, and plastic bag or space blanket for shelter are the four priority items. A knife or compact saw is necessary for building a shelter. Putting up signals, and collecting food and water come after establishing a good shelter. The priority rating for the non-essential items depends on the situation and location. Note that fire starting material is nice to have, but survival is possible without fires.



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CHAPTER 4
COLD WATER SURVIVAL SKILLS CLASSROOM SESSION

GOAL

To understand the effects of accidental immersions in cold water, and how to survive a cold water emergency.

OBJECTIVES

The students will be able to:

1. List the two factors that determine how long a person will survive in water.
2. Explain why it's best not to try swimming to shore.
3. Explain why it's best to stay with the boat.
4. Demonstrate how to put on and use all PFDs.
5. Tell why it's important never to attempt a swim rescue on a drowning victim.

MATERIALS AND EQUIPMENT

1. Video: *It Could Have Been Prevented*, and videocassette recorder and TV. Videos can be purchased or borrowed from the University of Alaska Marine Advisory Program or the Alaska Sea Grant College Program (see Reference section for addresses).
2. Optional videos: *Hypothermia* and *Cold Water Near Drowning*.
3. Type I, II, III, IV, and V Personal Flotation Devices (PFDs).
4. Photocopies of Cold Water Survival Skills Quiz.
5. Reading: Hypothermia

PRESENTATION PLAN

This section includes a classroom lecture and discussion, *It Could Have Been Prevented* video, a demonstration of personal flotation devices and an opportunity for the students to put on the PFDs, and the Cold Water Survival Skills quiz.

This lesson should be followed with the in-water pool PFD practical or the harbor survival suit practical (Chapters 5 and 6). The optional videos can be reviewed later.

TEACHING TIP

Instructor should be familiar with water safety flotation equipment and feel comfortable discussing the advantages and disadvantages of each PFD type.

INTRODUCTION

Alaskans spend a lot of time on or around the water either fishing, hiking, beachcombing, or traveling by air or boat. Ask students if they can swim, and ask those who can swim how often they swim in a pool and in local waters.

Hazards of local waters include:

- Currents from tides and in rivers
- Weather, such as wind and waves, rain
- Cold temperatures
- Debris, such as logs, deadheads, kelp

Ask how many have accidentally fallen into the water near where they live. Ask how it felt. Answers will include: it is cold, you panic or are scared, you're gasping for air, etc.

Discuss how they end up in the water. Answers include: fall off the dock, fall off the boat, boat overturns.

Ask students what their options are when they end up in the water. (Write these on the board.)

- *Rescue yourself*
- *Be rescued*
- *Drown*

DROWNINGS IN ALASKA'S WATERS

Alaska's drowning rate is ten times the national average, and is a leading cause of accidental death in rural Alaska.

Alaska drowning statistics:

- 45% occur during recreational outings (not just big fishing boats).
- 50% of the involved boats are skiffs.

Many people drown in Alaska because they:

- Spend more time on or around water.
- Can't swim, because most small towns don't have swimming pools to learn in.
- Cold water causes hypothermia.
- No PFDs, responsible for half of recorded deaths.
- People with PFDs do not wear them.
- Approximately 50% have been drinking alcohol.
- Don't know water rescue skills.

PREVENTING DROWNING

How can we reduce the drowning rate and increase chances of survival in cold water?

- Use proper PFDs whenever on or around water.
- Know rescue and self-rescue skills.
- Prevention: stay out of the water.

What are the two factors that determine how long you will survive in cold water?

1. Flotation. This is best provided by Personal Flotation Devices (PFDs). Several types are covered in this lesson.
2. Insulation. Any water below 80° can cause hypothermia (almost all waters in Alaska). Thermal protection is provided by PFDs, clothes, rain gear, etc.

SELF-RESCUE

We can help save ourselves by wearing proper flotation and insulative clothes.

Tell the students that if the boat is sinking, they should let it sink under them. If the boat is going down and there is time, put on a PFD, a warm hat, and warm clothes.

Clothes, including boots, will not drag a person down in the water and can provide valuable insulation. Layers of clothing also trap air, which can provide more buoyancy. Body warmth and energy are lost when boots and clothes are taken off in the water, and susceptibility to hypothermia is increased. Search and Rescue Divers often find dead bodies in the water by fol-

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lowing the trail of discarded clothes. The water in boots or clothes does not weigh more than the surrounding water.

When it is necessary to enter the water, enter slowly to avoid cold water shock. Try to keep as much of the body as possible out of the water to minimize heat loss.

If a boat is overturned or partially under water, stay with it. Ask students why this is true.

1. It will help you float.
2. It will be more visible to rescuers.
3. Rescuers will search the course the boat was taking.

***Rule:* When in the water, protect high heat-loss areas: head, neck, armpits, sides, and groin.**

***Rule:* Assume the H.E.L.P. or Huddle position depending on the situation.**

Have students demonstrate the H.E.L.P. or Huddle positions while wearing PFDs.

***Rule:* Attempt to float and to minimize heat loss until rescue.**

Huddle Position

H.E.L.P. Position

SURVIVAL TIMES IN COLD WATER

Discuss survival times in relation to water temperature and the types of flotation used.

Children, who have less fat and higher surface area to body mass ratios than adults, cool off much more quickly than adults. A man of average build will be helpless from hypothermia (subnormal body temperature) at 41°F (5°C) after 40 to 60 minutes if he is wearing thick conventional clothing. Thin men or those dressed in light clothing will become hypothermic more quickly. A woman of comparable size will usually cool at a slower rate than a man.

Although a body swimming in cold water produces almost three times as much heat as an immobile body, this additional heat is lost to the water because of increased blood circulation to the arms, legs, and skin. Because a swimming person cools 35% faster than when still, it is better to float quietly in a H.E.L.P. or huddle position or cling to the boat or flotsam.

The chart to the right gives average survival times. Individuals vary greatly in response to cold water. The survival times in the chart include long time periods during which the individuals are unconscious and unable to help themselves.

Ask students if they should try to swim to shore. The answer is in most cases NO. In cold water a person can swim only 1/10 the distance he or she can swim in a nice warm pool. For example, a person who can swim 10 laps in a pool can swim only the one lap length in 35° water. Swimming activity results in a loss of heat, and hypothermia will set in and lead to a quicker death.

Hypothermia Prevention Methods and Equipment Increase Survival Time

	Predicted Survival Time (Hours) in 50°F Water
Without flotation device worn	
Treading water	2
With personal flotation device (*e.g., vest or collar-type PFD*)	
Swimming	2
Holding still	2.7
H.E.L.P. position	4
Huddling with others	4
With hypothermia prevention flotation equipment	
Insulated flotation jacket ("float coat")	3 to 9
Survival suit	12 to 36

Adapted from *Survival in Cold Water*, by Chad Dawson, Minnesota Sea Grant Extension Program.

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PERSONAL FLOTATION DEVICES (PFDs)

Demonstrate the different kinds of PFDs by putting them on. Have students put on the PFDs also.

PFDs approved by the U.S. Coast Guard:

Type I. Offshore Life Jacket. It provides great buoyancy, and tends to turn an unconscious victim face up. But it is bulky, and has very little insulation. Because of the bulkiness people usually don't wear them.

Type II. Nearshore Buoyant Vest. This is a typical life vest. It will keep the head and neck out of the water on unconscious people. The Type II has very little insulation.

Type III. Vest or Float Coat. These are generally the most comfortable, and they are buoyant. Of the two, the float coat has more buoyancy and more insulation. There are many different styles to choose from.

Type IV. Ring Buoy or Seat Cushions. They are used to toss to someone for rescue.

Type V. Overalls. These are similar to a survival suit but much more comfortable to work in. They provide excellent insulation and buoyancy, although they are not as insulative as a survival suit.

Survival suit. This provides buoyancy and insulation. A person can survive in cold water for up to 24 hours (maybe more) in a survival suit.

In addition to the Coast Guard-approved PFDs, there are inflatable devices not approved by the Coast Guard. These include the inflatable suspenders or the Stormy Seas jackets, which are used by many seafarers who do not like the bulkiness of Coast Guard-approved PFDs. Remember: These devices do not replace Coast Guard-approved PFDs—they only supplement them.

Discuss the different types of PFDs and have students demonstrate how to put them on correctly. The best PFD is the one a person wears—a PFD will not do any good if a person goes into the water without it.

Questions to ask about your PFD

- Is it Coast Guard approved?
- Does it still fit?
- Does it still work? (Old PFDs lose their floatability.)
- Have you tried it out in the water?

Survival items that can be put into or attached to PFD include a survival kit, whistle, mirror, strobe light, signals, etc.

Type I.

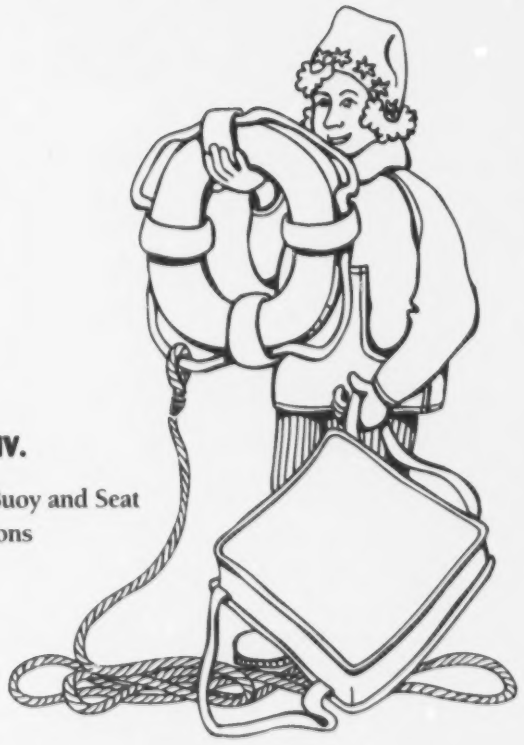
Offshore Life Jacket

Type II.

Nearshore Buoyant Vest

Type III.

Float Coat

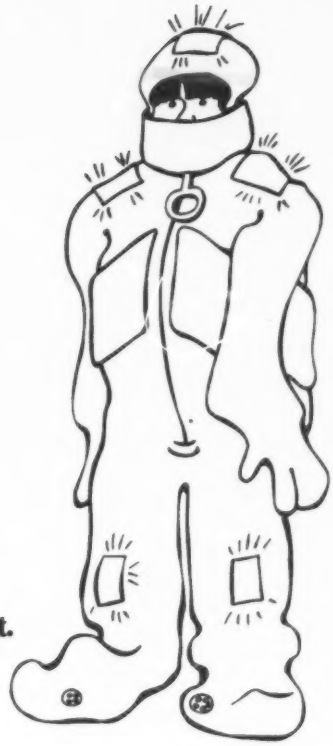


Type IV.

Ring Buoy and Seat Cushions

Type V.

Overalls.



Survival suit.

RESCUING OTHERS

(Write on board)

Reach, Throw, and Tow

BUT DON'T GO!

Never attempt a water rescue on a drowning victim. Attempt a rescue without getting into the water.

Why? It is too easy to become the second victim.

- A panicked victim may cling to you and pull you under, resulting in a double drowning.
- You may both die of hypothermia.
- Water dangers may kill both of you (such as currents).

A drowning victim may not be able to hear, see, or respond.

- Hands are going up and down.
- His head may be going in and out of the water, so he may not be able to see.
- If he goes into shock or hyperventilates, he may not be able to scream.

First, attempt to REACH the victim. Discuss items that can be used in different circumstances.

- Long pole
- Oar
- Gaff hook
- Clothing
- Fishing pole
- Fishing buoy with line

Or, THROW anything that provides flotation, such as styrofoam, water jug, cushion, etc.

Then TOW if you can pull the victim in. While centering your weight on your back foot, pull the victim toward you with a slow and steady movement. Demonstrate with student as victim, and teacher as rescuer.

Remember: To provide reassurance, yell to the victim and let him or her know what you are doing.

Ask students what they should do if they don't have anything to throw and can't get to the victim.

If there are two people, one should run for help and the other watch the victim. If there is only one person, he or she should mark the location and run for help. It is important to attempt a rescue or go for help. A cold-water-near-drowning victim may look drowned, but could be resuscitated successfully.

Hypothermia: Surviving In Cold Water

Reprinted from University of Wisconsin Sea Grant Advisory Services ***Pennants*** *WIS-SG-85-428-2, by James F. Lubner, University of Wisconsin Sea Grant Advisory Services, 1800 University Avenue, Madison, WI 53705, phone (608) 262-0645.*

Have you ever thought what it's like to suddenly plunge into cold water? Sudden immersion in cold water causes a severe shock to your body. The first reaction is often an involuntary gasping for breath—which can result in drowning if your head is under water at the time.

If you avoid drowning, hypothermia is your next concern. Very simply, hypothermia is a lower-than-normal body temperature. Cold water can conduct heat away from your body 25 times faster than cold air. Within 10-15 minutes, the temperature in your body's core—the brain, heart, lungs and other vital organs—begins to cool.

Your body responds by trying to keep as much heat as possible in the core. The flow of blood to the arms and legs is dramatically reduced. Your body tries to generate more heat by shivering and other involuntary muscle movements. In a very short time, you lose the ability to move your arms and legs.

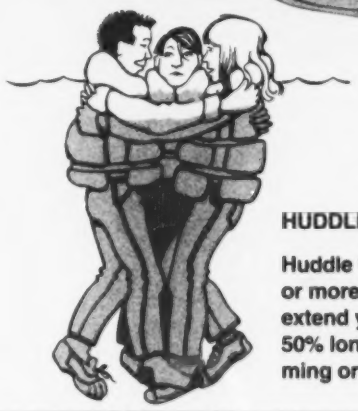
Shivering is unlikely to produce enough heat to balance the heat lost to the cold water. Your body has only limited, readily available energy reserves, and survival depends on making those reserves last as long as possible. If its core continues to cool, your body gives up its attempt to produce heat. Shivering stops. As the brain cools, its functions become impaired. You will probably become very confused; you may even resist efforts by others to assist you. Your muscles will become increasingly rigid. You will be almost completely unable to help yourself.

If your body continues to cool, you will lapse into unconsciousness. You may appear already dead: there may be no signs of heartbeat or breathing, because these functions slow dramatically. Death actually occurs after your heart cools to about 77°F and stops beating, although there are cases where people with body core temperatures less than 77°F have survived.

H.E.L.P.

(Heat Escape Lessening Posture)

Hold your arms and knees to your chest to protect the trunk of your body from heat loss.



HUDDLE

Huddle together with two or more people. This will extend your survival time 50% longer than swimming or treading water.

Illustrations adapted from original.

How fast does all of this occur? The answer depends on many factors, such as water temperature, your age and physical condition, how you behave while in the water, the amount of insulation provided by your clothing and your mental attitude. Under the worst circumstances, you may lapse into unconsciousness in 30 minutes or less; you could be dead in less than an hour.

However, you can take certain steps to extend your survival time and increase your chances of being rescued. Many of these steps will help your body to conserve energy and retain heat in the core area.

- Use some means of flotation so you don't have to use energy to keep yourself afloat. Treading water and swimming can increase your body's heat loss by as much as 35 percent. The best means of staying afloat is a personal flotation device (PFD). You should test it in a nonemergency situation to be sure that it fits properly and comfortably.

- Even the very best PFD is ineffective if it doesn't accompany you into the water. The only way to be sure that you will have it when you need it is to wear it at all times while on or near the water.

- Keep as much of your body out of the water as possible. This is especially true of your head and neck. As much as 50 percent of your body's heat loss occurs in these areas. A hat or hood can help protect these critical areas.

- Climbing onto a capsized boat or floating debris is better than remaining in cold water. Otherwise, huddling together with others in the water helps everyone conserve heat.

- Some PFDs provide better insulation from cold water than others. Generally, a vest provides more insulation than a collar-type device. Full PFD jackets, especially those equipped with a hood, can extend your survival time by protecting most of the core area of your body. Fully insulated flotation suits or coveralls offer the best protection.

◗ Your clothing can also help float and insulate you. Clothing traps air. If you find yourself in the water without a PFD, the air trapped in your clothing may be sufficient to float you for a while. Don't make the mistake of struggling to get out of your clothing: this drives out the air, increases your body's heat loss and wastes precious energy.

◗ You are not a survivor until you are rescued. Equip your PFD with items that will help you attract attention. Reflective tape and a flashing light, both secured high on your PFD, will make you more visible. A plastic whistle can be effective in drawing the attention of passing boaters or rescue personnel. You might also carry small aerial flares and orange smoke canisters, all of which are readily available at marine suppliers. These items should be secured to your PFD with a cord long enough so that you can use them. Remember that in cold water you will quickly lose the use of your hands and fingers so get these items out and prepared for use soon after you enter the water.

Hypothermia Chart

Temperature of Water (°F)	Exhaustion or Unconsciousness	Expected Survival Time
32.5	Under 15 minutes	Under 15 – 45 minutes
32.5 – 40	15 – 30 minutes	30 – 90 minutes
40 – 50	30 – 60 minutes	1 – 3 hours
50 – 60	1 – 2 hours	1 – 6 hours
60 – 70	2 – 7 hours	2 – 40 hours
70 – 80	3 – 12 hours	3 hours – indefinite
Over 80	Indefinite	

◗ If you have taken these precautions—you can—and indeed must—assume that you will survive. Maintaining a positive attitude can often make the difference between life and death in such situations.

Hypothermia Symptoms and First Aid Procedures*

MILD SYMPTOMS
(Body core temperature 97-93°F)

- Shivering, cold hands and feet.
- Still alert and able to help self.
- Numbness in limbs, loss of dexterity, clumsiness.
- Pain from cold.

First Aid

- Primary task is to prevent further heat loss and enable the body to rewarm itself.
- Give warm, sweet drinks—no alcohol!
- Apply gentle heat source to stabilize body temperature.
- Exercise victim to generate heat.
- Keep victim warm for several hours, keep head and neck covered.

MODERATE SYMPTOMS
(Body core temperature 93-90°F)

- Shivering may decrease or stop.

First Aid

- Same as above, except limit exercise.
- Offer sips of warm, sweet liquids only if victim is fully conscious, has begun to rewarm, and is able to swallow. No alcohol!
- Have victim checked by doctor.

SEVERE SYMPTOMS
(Body core temperature 90-82°F)

- Shivering has decreased or stopped.
- Confusion, abnormal behavior, loss of reasoning and recall.
- Victim appears drunk; very clumsy, slurs speech, denies problem and may resist help.
- Victim semiconscious to unconscious.
- Noticeable muscular rigidity.

First Aid

- Victim is in serious trouble—keep continuous watch over victim.
- Obtain medical assistance or advice as soon as possible.
- Treat as for shock—lay victim down, elevate feet slightly, keep immobile.
- Apply external mild heat to head, neck, chest and groin; keep temperature from dropping, but avoid too rapid a temperature rise.
- No food or drink—no alcohol!
- Transport soon, but gently, to hospital.

CRITICAL SYMPTOMS
(Body core temperature below 82°F)

- Victim is unconscious and may appear dead.
- Little or no apparent breathing.
- Pulse slow and weak, or no pulse found.
- Skin cold, may be bluish-gray in color.
- Eyes may be dilated.
- Body is very rigid.

First Aid

- Don't give up! Always assume patient is revivable.
- Handle with extreme care.
- Tilt the head back to open the airway—look, listen, and feel for breathing and pulse for one to two full minutes.
- If there is any breathing or pulse, no matter how faint or slow, do not give CPR, but keep close watch on vital sign changes.
- Stabilize temperature with external heat sources; try skin-to-skin, chest-to-back warming (leave legs alone) and/or exhale in victim's face and in unison with his/her breathing.
- If no breathing or no pulse is detected for one to two minutes, begin CPR immediately.
- Medical help is imperative—hospitalization is needed.

** Adapted from the University of Rhode Island Sea Grant Program and the United States Yacht Racing Union.*

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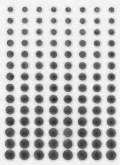


COLD WATER SURVIVAL SKILLS QUIZ

Student Name_____

1. What are the two factors that determine how long you will survive in cold water?

   _____

   _____

2. If your boat goes down and you can barely see the shore you should try to swim to shore.

   True or False (circle correct answer)

3. If you can swim you should swim out to a drowning victim to try to save him or her.

   True or False (circle correct answer)

4. If you are by yourself in the water, use the_____ position.
   (H.E.L.P., Huddle)

5. A float coat is a type III Personal Flotation Device.

   True or False (circle correct answer)

6. If your skiff overturns and is still floating you should (check the correct answer):

   ____ swim to shore

   ____ stay with the boat

7. List four reasons why Alaska has so many drowning victims.

   1.

   2.

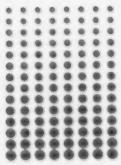
   3.

   4.

8. All waters in Alaska are so cold that being in any Alaska water for a while can lead to

   _____

COLD WATER SURVIVAL SKILLS QUIZ



9. You can reduce the number of drownings in Alaska and increase your chance of survival in cold water by (check all correct answers)

   _____ knowing how to rescue someone

   _____ staying out of the water

   _____ swimming to shore when you fall in

   _____ assuming the H.E.L.P. or Huddle position

   _____ swimming out to save a drowning victim

10. If you accidentally end up in the water, you have three options:

    a. rescue yourself

    b. get rescued, or

    c. _____

11. List the five areas on your body where a lot of heat is lost:

    _____, _____,

    _____, _____, and

    _____.

12. A _____ (a type of PFD) provides the most amount of insulation and flotation and can keep you alive for up to 24 hours in the water.

13. The best PFD for you is the one you will _____.

14. In attempting a rescue:

    _____, _____ and _____ but never _____.

15. List five items that can assist you in an attempted rescue:

    1. _____

    2. _____

    3. _____

    4. _____

    5. _____

COLD WATER SURVIVAL SKILLS QUIZ: WITH ANSWERS

Student Name_____

1. What are the two factors that determine how long you will survive in cold water?

   Flotation
   Insulation

2. If your boat goes down and you can barely see the shore you should try to swim to shore.

   True or False (circle correct answer)

3. If you can swim you should swim out to a drowning victim to try to save him or her.

   True or False (circle correct answer)

4. If you are by yourself in the water, use the_____ position.
   (H.E.L.P., Huddle)

5. A float coat is a type III Personal Flotation Device.

   True or False (circle correct answer)

6. If your skiff overturns and is still floating you should (check the correct answer):

   _____ swim to shore
   __X__ stay with the boat

7. List four reasons why Alaska has so many drowning victims.

   1. They don't wear PFDs
   2. Water is cold
   3. Alaskans spend more time around water
   4. Many were drinking alcohol
   5. Many can't swim
   6. Many don't know water rescue skills

8. All waters in Alaska are so cold that being in any Alaska water for a while can lead to hypothermia.

9. You can reduce the number of drownings in Alaska and increase your chance of survival in cold water by (check all correct answers)

__X___ knowing how to rescue someone
__X___ staying out of the water
_____ swimming to shore when you fall in
__X___ assuming the H.E.L.P. or Huddle position
_____ swimming out to save a drowning victim

10. If you accidentally end up in the water, you have three options:

a. rescue yourself
b. get rescued, or
c. die

11. List the five areas on your body where a lot of heat is lost:

Head, Back, Sides, Groin, and Armpits.

12. A survival suit (a type of PFD) provides the most insulation and flotation and can keep you alive for up to 24 hours in the water.

13. The best PFD for you is the one you will wear.

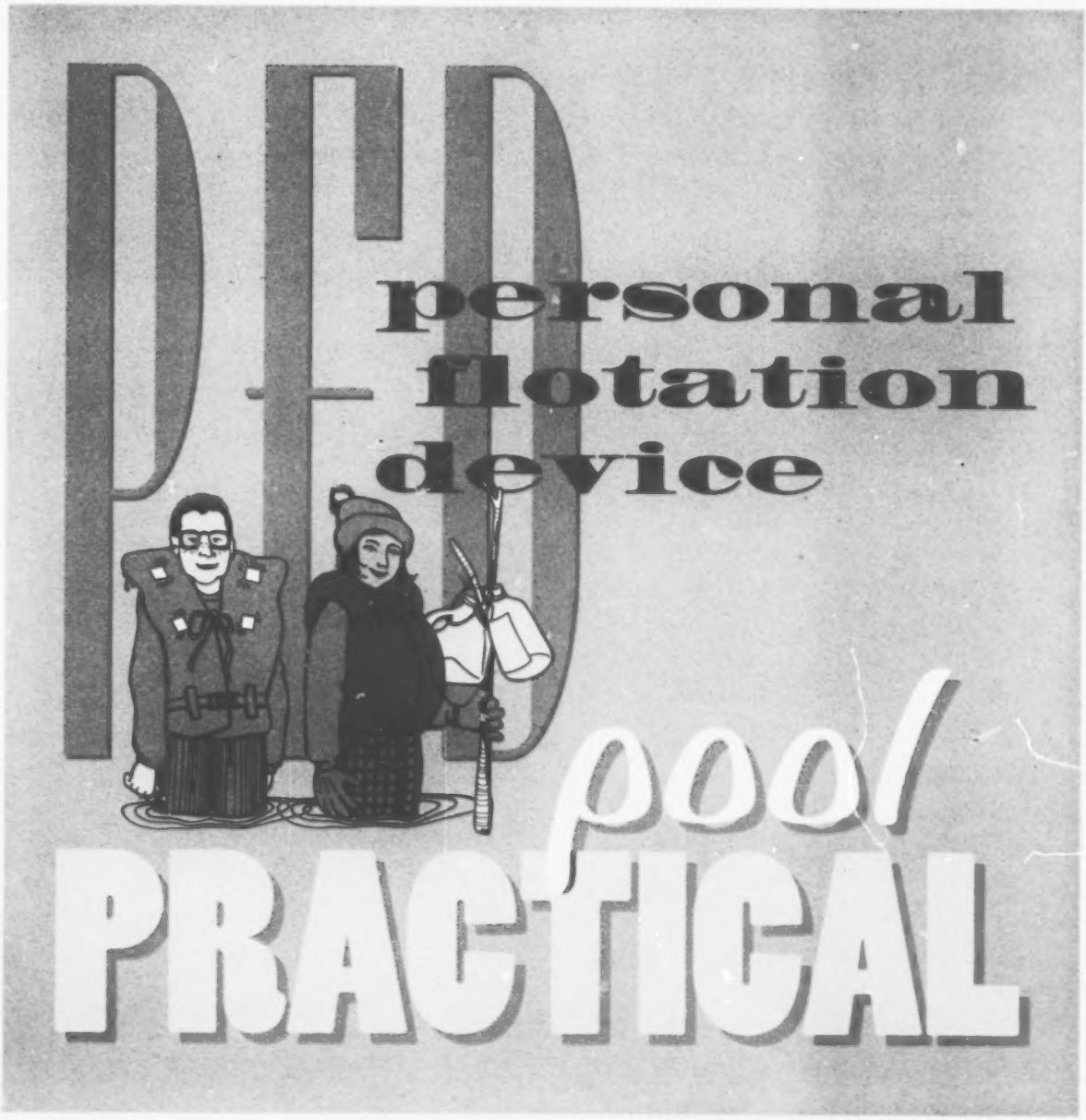
14. In attempting a rescue:

Reach, throw, and tow but never go.

15. List five items that can assist you in an attempted rescue:

(Answers can vary)

1. Oar
2. Rope
3. Clothing
4. Branch
5. PFD
6. Other people


PFD
personal
flotation
device
pool
PRACTICAL

CHAPTER 5
PERSONAL FLOTATION DEVICE POOL PR[illegible]

GOAL

To provide students the opportunity to practice using PFDs in the water and to practice water rescue skills.

OBJECTIVES

The students will be able to:

1. Demonstrate putting on PFDs.
2. Demonstrate the H.E.L.P. position.
3. Demonstrate the Huddle position.
4. Demonstrate a successful reach-to-rescue operation.

NOTE TO INSTRUCTOR

This lesson is designed to follow-up and review the classroom lesson on cold water survival skills.

If possible, conduct both the PFD Pool Practical and outdoor Survival Suit Practical (Chapter 6) exercises. Students can become familiar with the equipment in the pool, and then experience a more realistic, outdoor cold-water exercise.

EQUIPMENT

The pool may be able to supply some PFDs. Be sure all equipment is marked so it is identifiable to the owner.

1. At least nine of the following PFDs (three for each station):

Type I

Type II

Type III, vest, float coat (optional),

Type IV, seat cushion or ring buoy (only one is necessary)

Type V, flotation coveralls (optional)

2. Reach-to-Rescue items (variety)
    - Oar
    - Long stick
    - Gaff hook
    - Life ring with line attached
3. Optional: Airline seat cushion and state ferry PFD.
4. Instructor may want to have garbage sacks to carry out wet gear.
5. Students should bring swim suit, towel, extra clothes, etc.

SAFETY AND TEACHING TIPS

1. If waivers are required, be sure they are filled out and returned. The use of waivers depends on school policy.
2. As with all training, the safety of the student comes first. No student should be forced to participate and only students in good physical condition should be allowed to participate.
3. Arrange for pool time and any required fee well ahead of time.
4. Know where phones are and be sure emergency numbers are posted at the pool area.
5. It is required that a lifeguard be on duty and available at all times at the pool. Do not permit students to practice with any rescue equipment that is intended for the lifeguard's use only.
6. At least three adults should be at the pool (in addition to the lifeguard) and at least one should be a good swimmer. All adults should know the order of activities and their responsibilities during these activities.
7. Students must comply with all pool rules.
8. Find out in advance if any students can't swim or are afraid of the water. Don't embarrass students by discussing this in front of all of the others. Make special arrangements for one-on-one instruction for non-swimmers who are willing to try on PFDs in the water. Be prepared to deal with students who have a fear of water and panic when they are forced to be around or in it.
9. Rope off the shallow end of the pool to keep non-swimmers from deep water. Optional: Rope off deep end to allow for free swimming when students are finished.
10. Use the station method, with students rotating from one station to the next. Limit the number of students in the water to three at each station.
11. Be sure the students understand the order of activities and that horseplay will not be tolerated.
12. Assign students to rinse off all gear with fresh water at the end of session.

TEACHING PLAN

Ask students to shower and put on swimsuits. When they report to the pool room, have them put on PFDs and circulate from station to station.

Stations

1. H.E.L.P.
2. Huddle
3. Reach-to-Rescue

One chaperone should be at each station to coordinate activities and ensure proper conduct around the pool.

Station 1: H.E.L.P.

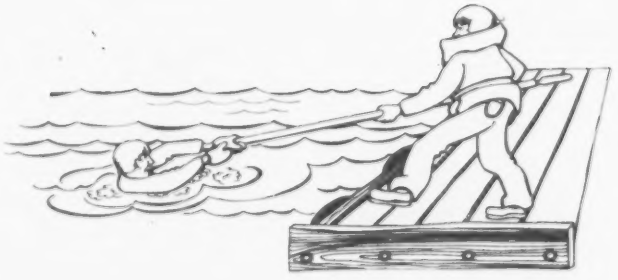
Ask three students, wearing PFDs, to get into the water and demonstrate the H.E.L.P. position for 1 minute. Move to Station 2.

Station 2: Huddle

Have same three students Huddle for 1 minute. Move to Station 3.

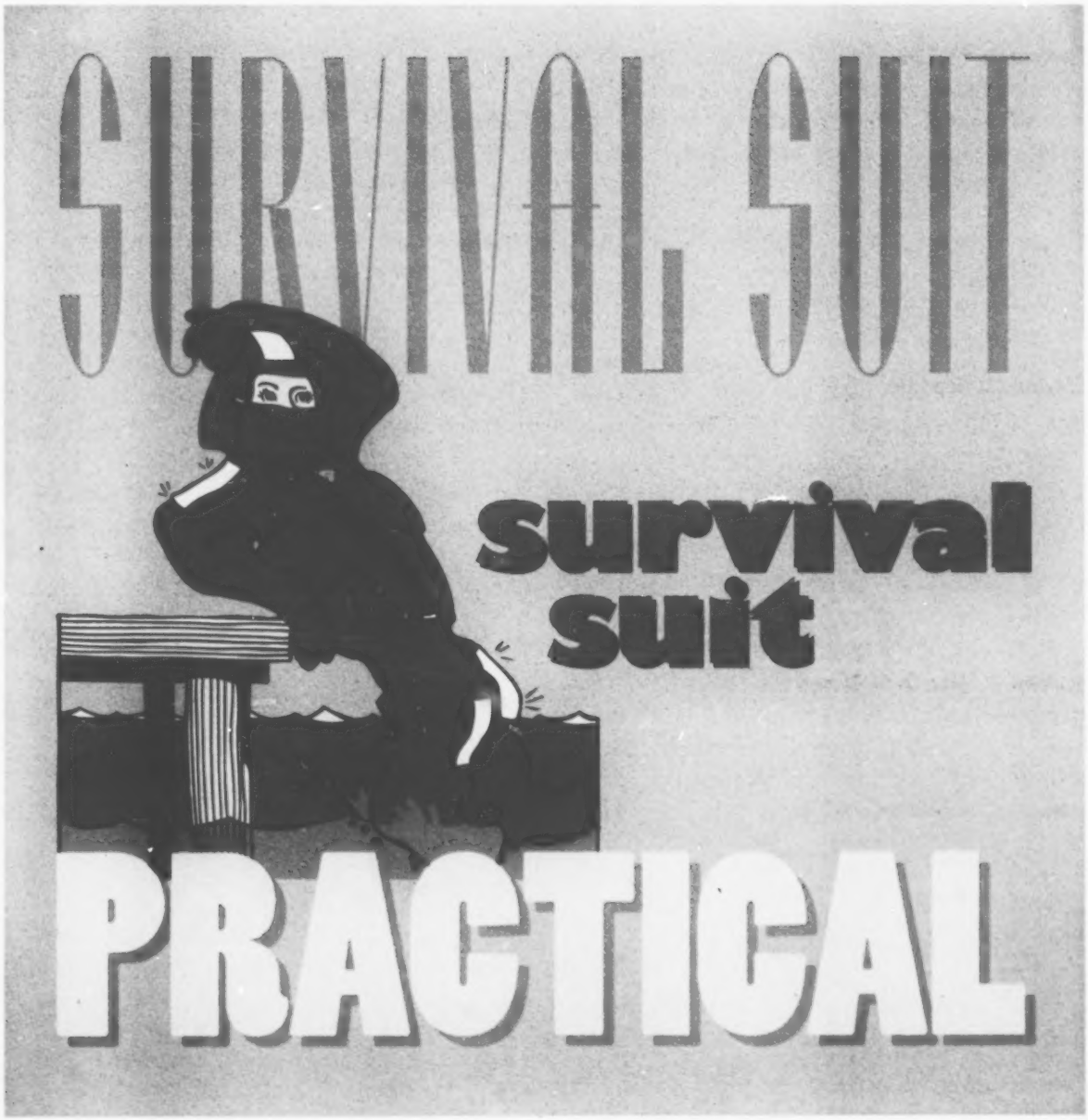
Station 3: Reach-to-Rescue

Chaperone should demonstrate the correct reach-to-rescue technique to the group of three, and then have students practice reach-to-rescue using a life ring or floating object attached to a line.



If time is available, have students try various PFDs in the water. Have them practice getting into a float coat or a Type I or II in the water.

Clean up area and ask students to rinse off a piece of equipment while they are taking their shower. Head back to the classroom.


SURVIVAL SUIT
survival
suit
PRACTICAL

CHAPTER 6
SURVIVAL SUIT PRACTICAL

GOAL

To provide students the opportunity to practice using survival suits in an open water setting.

OBJECTIVES

The students will be able to:

1. Demonstrate how to properly get into a survival suit.
2. Demonstrate how to properly get into the water while wearing a survival suit.
3. Demonstrate how to position themselves in the water while wearing a survival suit.

NOTE TO INSTRUCTOR

Many students will not have survival suits on board their family boats. However, the survival suit practical gets students in the ocean with a PFD on, which is a valuable exercise in itself. It is also a favored activity of the students and can be considered a bonus.

This activity is separate from the PFD pool activity because it commands a lot of attention, and detracts from the importance of the other PFDs as useful and necessary pieces of survival equipment.

EQUIPMENT

1. One to four survival suits and one float coat or coveralls for instructor. One survival suit for chaperone in water.
2. One ring buoy tied to long length of rope.
3. One other reaching or throwable device.
4. Non-petroleum wax for survival suit zippers.
5. Optional: Stepladder to get out of water onto dock, manned rescue boat or inflated survival raft in the water, and first aid kit.

SAFETY AND TEACHING TIPS

1. As with all physical activities, the safety of the student comes first. No student should be forced to participate.

2. No one should be allowed in the water without a survival suit on. Have one adult wearing a survival suit in the water, or one adult wearing a PFD in a skiff or in an inflated raft.

3. Only two to four students should be allowed in the water at one time. They should enter the water in a slow, controlled manner. Only one of the two to four can be a non-swimmer. A non-swimmer should be accompanied by an adult in the water. Head-first diving must be prohibited.

4. The instructor must be aware of the swimming ability and comfort level of each student. Students should not be allowed to go beyond the rescuer's reach.

5. The instructor and chaperones should be wearing a flotation device at all times when students are in the water, and should have a rescue device within reach. The instructor and chaperones must be able to recognize a panicked or distressed swimmer, and be ready and able to assist a student in the water if necessary.

6. At least one adult should be current in CPR and First Aid.

7. For young students who are afraid of the water, pair the youngster with a chaperone or older student to work with the younger person. Get the youngster in the suit and gently slide him or her into the water and between the legs of the older student (both on their backs). The younger student can use the legs of the older student for support. The older student can propel the two around in the water until the younger student feels comfortable enough to try it on his own. This looks like a mother otter with her baby.

8. If some students are afraid of the water and will not get into the water, have them put on the suit but don't force them in the water.

9. All equipment should be marked and identifiable to the owner.

10. This exercise should not be done on a sandy beach. Sand would clog open the valve in the feet, allowing water to enter freely. The suit would get wet, and everyone who used the suit would get wet and cold.

TEACHING PLAN

Have two to four students put on suits at one time. The students who are getting into the suits should be assisted by the students who will get into the suits next. All other students should be separated from this activity to avoid confusion.

The students should enter the water one at a time off the dock, either stepping off or sitting down and sliding in.

The students who are not directly involved should be sitting down, and noise should be kept to a minimum until the routine is established. The swimming area should be free of obstacles.

DONNING SURVIVAL SUITS

Demonstrate how to get into a survival suit and discuss proper entry into the water.

Remind students that they would keep their clothes and boots on in a real situation. Ask students to take shoes off to minimize wear on the survival suits. Plastic bags can be placed over foot to ease the foot into the suit, minimizing wear and tear on the suit.

Ask the students to try to zip their own suits. Hold the bottom of the zipper with one hand, and pull zipper up with the other hand at the same time. This also helps to ensure the zipper will not break.

Have only one student blow up air bladder. Don't spread germs by having more than one try it.

For those jumping into water, make sure the air bladder is not inflated to prevent injury to the student's neck and to the air bladder.

HOW TO PUT ON A SURVIVAL SUIT FAST

This is a quick way to get into a survival suit in an emergency. It can help you when seconds count. If you have time, put on warm garments and leave shoes on for additional hypothermia protection and use on the shore.

Practice this in a pool or at the dock.

Step 1

- Lay the suit flat with the zipper side up.
- Sit on the dock and work legs into feet of suit.
- Scoot down into the suit like a sleeping bag.
- Put straps around ankles.
- Stand up.

Step 2

Put your non-dominant arm into the suit first (your left arm if you are right handed). Pull the hood over your head with your free hand. You can do this while standing, or from a kneeling or sitting position.

Step 3

Put your dominant arm in the suit last. Grab lanyard on zipper and pull zipper all the way up. Fasten face flap over face.

IN AND OUT OF THE WATER WITH A SURVIVAL SUIT

The best way to get into the water while wearing a survival suit is slow entry.

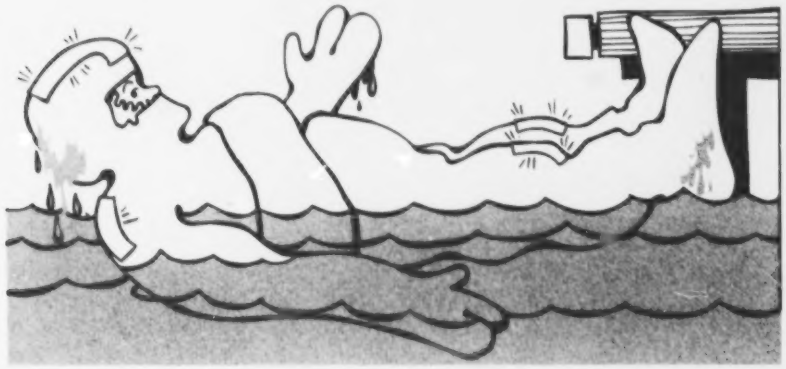
- Sit down on dock with feet dangling in water.
- Slide into water and float on your back.
- Hesitant students can hold onto a chaperone's hand or to the dock edge.

Or you can step off.

- Face sideways to dock.
- Protect your head with yuur arm nearest dock.
- With your other hand, hold suit away from the face to let air escape.
- Step out and away, feet first.
- Float on your back.

While you are wearing a survival suit, the best way to swim is on your back. Mist of the swimming action is with your arms.

Allow students 2-5 minutes (time will vary depending on size of class) to float around on their back and feel comfortable in the suits.



Assist in the exit from the water to ensure minimum impact on the students and survival suits.

1. Have two students on the dock assist with water exit. The student who is exiting the water should keep his or her face toward the dock to avoid back injury.
2. If a ladder is available, the student can exit using the ladder. Because of the bulkiness of the suit's feet, the student will likely need assistance climbing the steps.
3. Try to avoid getting creosote on the suit during the exit.

If time is available allow students a second opportunity to go in the water. Then ask the students who get the second opportunity to help carry the suits back, rinse them off, and hang them to dry.

SUIT CLEANUP

Suits must be well rinsed in fresh water on the outside and inside and allowed to dry in a cool, dark, dry place. Turning the suit inside out first to dry will save time and insure that the inside is not forgotten. After the suits are dry, the zippers should be coated with a non-petroleum wax. The suits should always be stored with the zipper open.

CHAPTER 7
OUTDOOR SURVIVAL PRACTICAL

GOAL

To familiarize the student with survival skills through hands-on outdoor activities. Time allotted is one full day.

OBJECTIVES

The students will be able to

1. Collect and eat at least two foods not tried before. The instructor will boil water for 20 minutes and cook edible foods for 2-5 minutes.
2. Make a garbage sleeping bag (grades K-1), build a debris bed (grades 2-4/5), or build a debris shelter (grades 4/5-12).
3. Construct at least two signals, one visible by air and one visible by land or sea.
4. Build a fire using magnesium fire starter, or flint box, and keep the fire going for at least 10 minutes.

SAFETY AND TEACHING TIPS

1. Choose a location where there is suitable material to build shelters (wooded area). Get permission to use the land if necessary, and know the rules of the area. (Are brush cutting and fires allowed?)
2. The location can be a beach fringe for teaching edible sea life, or wooded area for teaching a "lost in the woods" experience.
3. Learn local edible and non-edible plants and animals. Take a wild-foods expert along if necessary. The reference pages in this manual include books on survival foods for Alaska.
4. For a beach fringe, choose a day with a low tide during the morning or early afternoon, and plan activities with the low tide in mind.
5. Be sure students know the schedule of activities and their responsibilities.

6. Pair students up (buddy system) and have two pairs act as one working group (four students per group).

7. Ask students to bring survival kits, a sack lunch, something to drink, tissue paper, and extra clothes. They should wear warm clothing including a hat, gloves, and rain gear.

8. The instructor should bring a coffee can for cooking collected shellfish, small plastic bags for collecting food, a first aid kit, a knife, extra clothes, a survival kit, lunch, and something to drink.

9. Waiver forms will depend on school or organization requirement (see Chapter 1).

10. It is best to have one adult chaperone for each group (one chaperone per four students). The instructor should not function as a chaperone because he or she will need to monitor the progress of all groups. Be sure the chaperones are familiar with the planned activities and know what their role is. They can use the enclosed check-off sheet to monitor and record activities of their group.

11. The instructor may want to pack cooking water if there is no water at the site, or if it is inconvenient to boil water for 20 minutes.

INTRODUCTION

See Agendas on pages 3, 4, and 5.

The order of events varies depending on the situation.

While still at the school, organize students in groups of four with their chaperone. Review the planned activities for the day, and review what is expected of the students. Go over any rules. Ask students if they have any last minute questions. Check to see that students have their survival kits, gear, lunch and drink, and rain gear before heading out the door.

Transport (or walk) to location and hike into area.

Organize in one main camp area where backpacks, lunches, etc., can be left. Sit the students down and go over planned activities. Briefly review Seven Steps and discuss recognition and inventory. Ask them what they could use if they were in an emergency in this area. (They will be using items in their survival kits.) Tell students and chaperones approximate times for each of the activities. Break into groups and begin activities.

COLLECTING FOOD

(½ to 1 hour)

The instructor or other expert must be familiar with the various plants and animals in the area.

Give each group one or two plastic bags and ask them to collect a variety of edible plants and animals. If students are not sure what to collect, tell them

to collect anything that looks like an animal or plant for eating or discussion purposes. What they collect will depend on where they are.

Warn students not to collect volumes of critters and plants if they do not plan on eating them all. Regroup and have students pile edibles on plastic that has been spread open. Show each edible food type and discuss how to clean, prepare, and eat. Discuss inedible foods.

After the students have been sent off to the next activity, the instructor should rinse seafoods in fresh water and clean and prepare the foods. Throw back extra shellfish if necessary. If cooking water is collected from a local water source (creek) it needs to be boiled for a total of 20 minutes to ensure it is safe to drink. Boil the water for 15 minutes (in the coffee can), then toss in edible sea life and boil another 5 minutes. If water is brought from home, boil water only long enough to cook the catch (5 minutes).

Edible plant preparation depends on the plant. Most leaves and berries can be eaten raw.

Have each student eat two edibles that they have not tried before. The chaperone should tell the students whether the food is safe to eat, and record the food eaten by each student in their group.

BUILDING SHELTERS

(1½ – 2 hours)

Ask groups (of four students) to choose a location for their shelter. Make sure groups are not too close to one another, so they will not compete for resources. But keep them all within the boundaries of a designated area.

Give students 1 to 1½ hours to construct one shelter per group, big enough for one person. Shelter types will depend on age group: garbage sleeping bag for K-1, debris bed for grades 2-4/5, and debris shelters for grades 4/5-12.

Monitor groups to be sure they are sticking to their activity. Some groups may have difficulty working together. The garbage sleeping bag and debris bed groups will finish quickly. Approve their shelter, ask them to save it for presentation, and then allow them to start a debris shelter if they want to, although they will likely not finish it. Or offer their mid-morning snack if that is what they are used to.

After time is up, regroup. Move from one shelter to another and ask each group to discuss their shelter. Have someone from each group demonstrate getting into it. Discuss the location and ask for suggestions for improvement, emphasizing positive suggestions. Discuss the good points of the shelter. Does it meet the three criteria?

- Small
- Insulative
- Weatherproof

The instructor will probably choose to break for lunch after the shelter-building exercise.

COLLECTING WATER

(15 minutes)

During or after lunch discuss how drinking water can be collected. Discuss water collectors and sources of water

Have groups set up a water collection system near their shelter and compare their collectors with those built by other groups.

SIGNALS

(½ hour)

Have each group construct two signals:

- A signal that can be seen by someone from the air. For example, a 3' x 18' SOS made from white or contrasting rocks, grass, seaweed, driftwood, etc.
- A signal that can be seen from land or water. For example, hanging debris.

The students should use what they find in the area in addition to what they have in their survival kit.

NOTE: Do not allow groups to use fires as a signal. Also, the whistles can be a problem. As a general rule, it may be best not to allow students to use whistles, and confiscate (for the day) every whistle that is blown. As a compromise, offer a whistle blowing time (e.g. ten minutes during lunch or at the end of the day).

The chaperone or instructor should answer the following questions when evaluating the two signals: Is the SOS large enough, is the hanging debris in groups of three? Would Search and Rescue see and rescue this group if they were searching from the air or from the beach?

Have students look at and discuss signals built by other groups. Ask which ones are good and why. Ask how signals would be different for a different area (woods vs. beach fringe).

Students should destroy signals at the end of the exercise or before leaving the area.

BUILDING A FIRE

(20 to 30 minutes)

Each group should work together using a magnesium fire starter or flint kit. Each fire must burn for at least 10 minutes. Do not allow students to start the fire until they have collected enough fuel to burn for 10 minutes. The 10

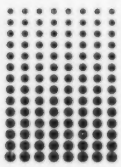
minute time is to ensure that the students can keep a fire going beyond the initial start up.

CLEANUP

Regroup and clean the area, making sure all plastic is taken out.

Return to school or home. Rest.

NOTE: Consider replacing items in survival kits that students used, such as twine, garbage bags, surveyor tape, etc.



OUTDOOR SURVIVAL PRACTICAL CHECK SHEET

Chaperones: Please use this check sheet to record whether each student has completed the tasks during the outdoor exercise and whether the student has participated and worked with the group.

Student Name _____ Chaperone _____

	Completed task	Participated in events	Cooperated with group
Organized			
Shelter:			
• small			
• insulative			
• weatherproof			
Signals:			
• 1 by air, SOS			
• 1 by water, hanging debris			
Water Collector			
Food:			
• 1st edible			
• 2nd edible			
• **Fire:**			
• burned for 10 minutes			

REFERENCES

The following references were used by the author in assembling this curriculum. They should be used by the teacher to better prepare for teaching outdoor safety and survival. It is particularly important that the instructor is competent in teaching water safety and edible foods, because incorrect information can result in an injury or life-threatening situation for a student.

In addition to using these materials, the instructor should call on the services of local experts such as a wild foods expert for edible and poisonous wild foods, the local search and rescue team or the U.S. Coast Guard to assist in outdoor water exercises, and first aid personnel for poolside water safety.

For further assistance in your education efforts, you may contact the Alaska Marine Safety Education Association (AMSEA). AMSEA is dedicated to reducing the loss of life to outdoor emergencies through education. They have an army of survival instructors located throughout Alaska who may be willing to help. You may also call on AMSEA to borrow numerous videos and other educational materials, including the comprehensive *Marine Safety Instructor Training Manual*, upon which this curriculum is largely based.

AMSEA
P.O. Box 2592
207 Moller Dr. Rm. 113
Sitka, AK 99835
Phone (907) 747-3287

The Alaska Sea Grant Marine Advisory Program has field offices throughout coastal Alaska who offer marine safety and survival courses and videos. Contact the main office in Anchorage for information on the Marine Advisory office nearest you.

Marine Advisory Program
University of Alaska
2221 E. Northern Lights Blvd. Suite 110
Anchorage, AK 99508-4140
Phone (907) 274-9691

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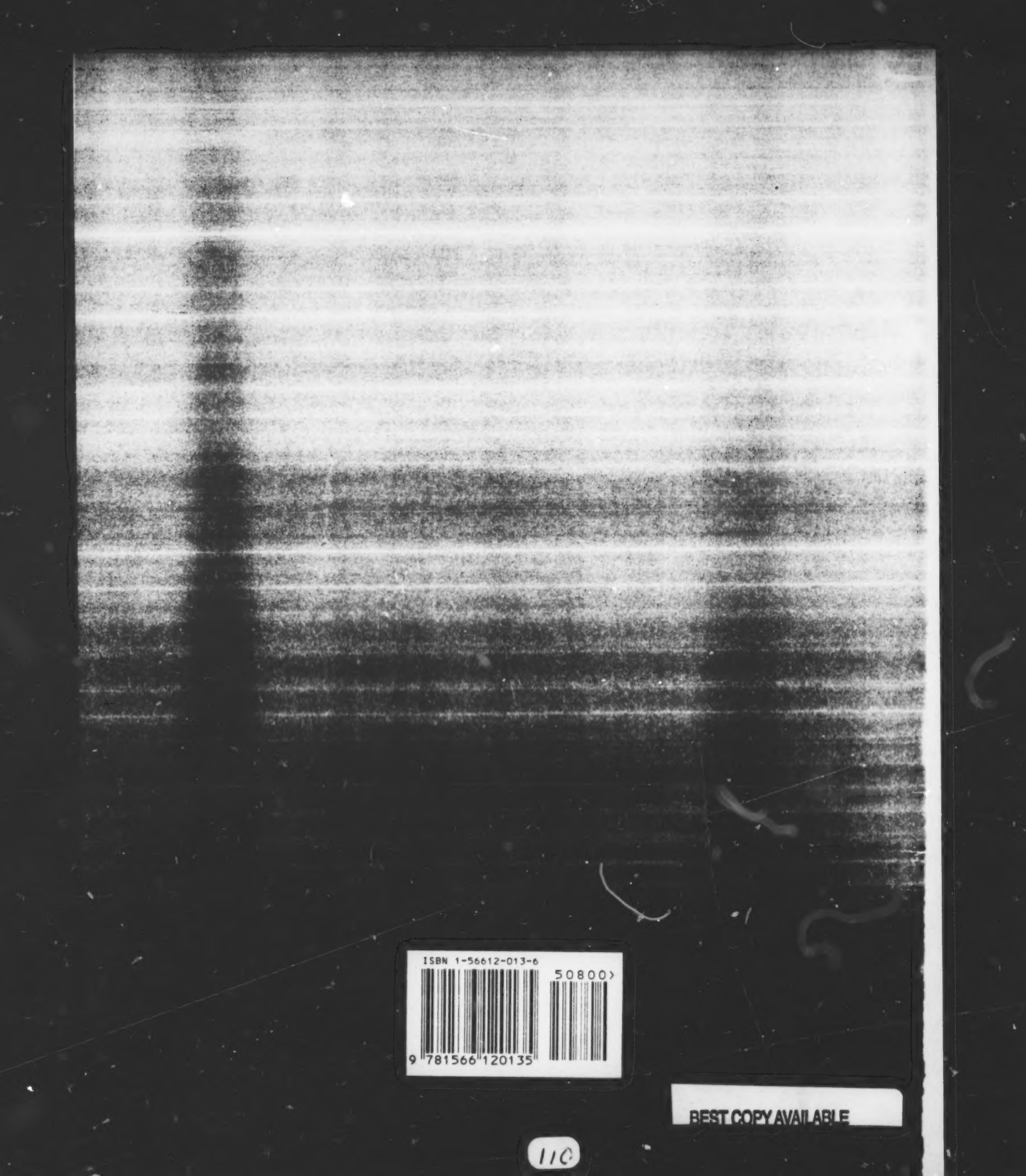

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FOR ALASKA'S YOUTH

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ALASKA SEA GRANT COLLEGE PROGRAM

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OUTDOOR SURVIVAL TRAINING

FOR ALASKA'S YOUTH

Student Manual

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Sea Grant is a unique partnership with public and private sectors combining research, education, and technology transfer for public service. This national network of universities meets changing environmental and economic needs of people in our coastal, ocean, and Great Lakes regions.

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About This Book

This student manual accompanies an instructor manual for a course on outdoor survival training for Alaska's youth. It is written based on experiences in the Gulf of Alaska, but it can be used in other geographic regions too.

This is your own copy. After you use it for the survival class, take it home and share it with your family and friends.

About the Author

Dolly Garza, associate professor with the University of Alaska Fairbanks, School of Fisheries and Ocean Sciences, has worked for the Sea Grant Marine Advisory Program for ten years. Garza is an instructor and board member for the Alaska Marine Safety Education Association. She has been teaching outdoor survival and water safety skills to southeast Alaska students since 1985.

Garza has a B.S. in fisheries from the University of Alaska and an M.S. in fisheries from the University of Washington, and she is a Ph.D. candidate at the University of Delaware.

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Thanks to Curriculum Reviewers

The curriculum in this book is based on the Alaska Marine Safety Education Association's *Marine Safety Instructor Training Manual*. The curriculum manuscript was reviewed by the Curriculum Review Committee, who made significant improvements to the content and form, and made additions to the materials to ensure it is relevant to students in grade schools and high schools.

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—Dolly Garza

If you spend a lot of time outdoors, you can find yourself in an emergency at any time. Which of these outdoor activities are you involved in—fishing, hiking, boating, berry-picking, hunting, camping, wildlife watching, and playing?

It is important to think "it can happen to me." You should prepare for an emergency before leaving home or you may not have the right equipment or skills to face an emergency situation.

Someone who is lost, or tossed into an emergency, may panic. Fear, cold, and being tired, hungry, or thirsty are all normal feelings in an emergency situation. You must learn to overcome these feelings. Develop the attitude that you will survive.

Don't go out adventuring in the woods or on the water if you are not in good health. If you find yourself in an emergency, your poor health may work against you.

How to increase your chances of surviving an emergency:

- Think positive
- WANT to survive
- Be in good health
- Learn survival skills
- Take along survival equipment

How to get ready for a trip:

1. Check the weather forecast. Ask elders and other experienced adults what they think the weather will be like.

2. Know the following:

- Where you are going
- The route you are taking
- How long it will take to get there
- How and when you will be coming back

3. Tell at least one adult your plans and let them know at what time they should call for help.

4. Never travel alone, especially if you don't know the area well. It is best to travel in groups of three or four. If someone has an accident, the second person can go for help and the third person can stay with the injured one.

5. Take the right clothes and gear. Take long underwear, rain pants, rain jacket, extra mittens, socks, a hat, and a survival kit. Dress in layers. Wool and polypropylene are the best insulative materials. Cotton is a poor insulating material, even though cotton jeans are what most people wear. Insulation traps the body's heat next to the body.

✔ **It is very important to prepare for an emergency BEFORE leaving home.**

Read the following stories about Jeffrey Young. Think about what Jeffrey had going for him. What should he have done to make it easier for his rescuers to find him?

The Daily Sentinel

Sitka, Alaska — Monday August 24, 1987

Lost Boy Rescued After 5 Days

Searcher Finds 9-Year-Old In Good Shape On Gavan Hill

By **Allen Sykora**
Sentinel Staff Writer

"Hey, my name is Jeff." The child's voice from a wooded ravine led Dave Caldwell to nine-year-old Jeffrey Young Sunday morning. The boy was rescued safe and sound after five nights in the woods without shelter and only berries to eat.

Since Wednesday morning, the boy had been the subject of one of the most intensive missing person searches in Sitka history.

Rescuers and a doctor at Mt. Edgecumbe Hospital all described the boy as in remarkably good condition for his ordeal. He was found by a member of a volunteer search team high on Gavan Hill at about 11 a.m. Sunday.

Because of the rugged terrain, it took a couple of hours for rescuers to administer first aid and carry him to the nearest road, where an ambulance was waiting to take him to Mt. Edgecumbe Hospital.

"He's doing remarkably well," said Dr. Thomas Krahn, who said the boy suffered only some swelling of the feet and some bruises.

"He's one of the healthiest people I've seen today," said the Mt. Edgecumbe hospital staff physician. After the examination, Jeffrey was taken to a room to rest and recover.

The news of the rescue came as a team of bloodhounds and their handlers, expenses covered by volunteers, were being flown to Sitka for another attempt to solve the mystery of the disappearance of the boy, on a hillside in direct view of most Sitka residents. Jeffrey had last been seen Tuesday morning by his brother Tom, from whom he had become separated as Tom was hunting deer on the hill.

Joyous family members and friends lined the hospital hallway outside the emergency room Sunday afternoon while the boy was being examined upon arrival by ambulance. He raised his head and flashed them a big smile as he was wheeled out to a hospital room.

Dave Caldwell, who found the boy, was in a team with Rod Lowe and Kevin Kambak. They borrowed a two-way radio from the fire hall and headed up Gavan Hill early Sunday morning, following a trail that begins behind the city landfill.

They made their way to some cliffs, which seemed a likely spot for a closer look. Caldwell walked above the cliffs, while the other two men were below.

They were calling out to each other to keep track of the whereabouts of their own team members in the nearby brush, Caldwell said. At one time he was out of earshot of the others, so when they got back within hearing distance they shouted that they would continue their respective courses until they could meet back on the trail.

"I went along for a while and lost vocal contact again," said Caldwell, "so instead of calling Rod's name, I called Jeff's name."

Caldwell said he had not been calling the boy's name all day, but the third time he called out the boy's name, a child's voice answered.

"He said, 'Hey, my name is Jeff,'" said Caldwell.

Caldwell said he was stunned to hear the young voice from nearby, and scarcely believed his ears. But he quickly followed the voice to a gully, where he spotted the boy.

Jeffrey was standing, but said he had a hurt leg. His clothes were wet from the waist down.

"He sure was glad to see somebody," said Caldwell. Caldwell happened to be the carrier of the two-way radio carried by his party. He called in the news that the town had been praying for: Jeffrey Young had been found alive and well.

Caldwell fired two shots to summon his companions, but they were unable to find him until helicopter pilot Arnie Johnson directed them to the spot.

Don Kluting, a member of the fire department's search and rescue team, was with a group beating through brush behind the Public Safety Academy, when he heard Caldwell's broadcast. The message had not been picked up at the fire hall, so Kluting relayed the news.

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Lost boy

Continued from page 2

"Then we ran up the hill," he said.

"The kid was in really high spirits," said Kluting. "He was happy, he was able to get up and walk." Nevertheless, the rescuers brought Jeffrey down the mountain on a stretcher that had been lowered by the helicopter.

Johnson was unable to find any clearing in the vicinity big enough to land the helicopter, which would have been necessary to get him aboard.

The professional search and rescue personnel who first reached Jeffrey sent a radio message to the fire hall that the boy complained of an injured leg, but that his vital signs were in the range of normal. As a precaution, they placed him in a hypothermia warming bag and strapped him to the stretcher.

News of the rescue quickly spread through town. Throughout the community, the yellow and white helicopter was clearly visible hovering above the hillside, marking the progress of the recovery party. In at least one church the news was received only moments after the congregation had prayed for Jeffrey's safe return.

A large crowd gathered at the base of the main Gavan Hill trail, which begins at the end of Baranof Street. Jeffrey's parents, family members, friends, and curious onlookers had walked up the path a couple hundred yards to the first open muskeg area, and cheered and hugged one another as rescuers emerged from the woods carrying the boy, wrapped from head to toe in the rescue blanket. Without pausing, the litter bearers placed Jeffrey into the waiting ambulance. Family hugged and shook hands with Kambak, Caldwell, and Lowe.

"I think I was happier than he was," said Caldwell about his feelings when first coming across the boy. "And he was pretty happy. If it wasn't for Jehova looking out for everyone, we wouldn't have found him. God is the one who led us through. That's who I've got to credit."

Two factors that worked in Jeffrey's favor were the unusually warm and sunny weather of recent days, and the nearby trickle of water that flowed through the gully in which he was located. Dr. Krahn and rescue personnel agreed that if it had been as rainy as usual in Sitka, without shelter the boy would have been at risk of life-threatening hypothermia.

And Kluting observed that while a person can survive for long periods without food, he can't last more than a couple of days without water.

Caldwell said Jeffrey told him he was able to see the Coast Guard and privately owned helicopters overhead during the five days of searching, but that he had not been able to signal them. However, said Caldwell, the boy told him he had not heard the voices of any of the scores of searchers on the ground until the final day. It was not immediately clear how long Young had been at the spot he was found.

Caldwell said the boy told him he had eaten some berries early in the ordeal, but that he had eaten nothing for the last couple of days before his rescue, because there were no berry bushes in the gully. From the gully, the boy could see the town and airport, Caldwell said.

"I've got to hand it to Jeffrey," said Caldwell. "He's a strong boy." Caldwell said the boy told him that he and his older brother had often gone into the woods. "He said his brother was top of the world," said

Story continues on page 4

...in Jeffrey's favor were the unusually warm and sunny weather of recent days, and the nearby trickle of water that flowed through the gully in which he was located.

...while a person can survive for long periods without food, he can't last more than a couple of days without water.

Lost boy

Continued from page 3

Caldwell.

Authorities had suspended the official search Friday night after the intensive effort of the previous three days had not located the boy. Up to that time, said a fire department spokesman, "official" search parties had spent more than 3,000 search hours on the ground in the woods, and an undetermined hundreds of additional hours had been put in by others, including family members who went out on their own.

Helicopters spent 32 hours in the air during the search, including 15.6 hours of flight time in which the Coast Guard was using infrared body heat detectors, said the fire department spokesman. He added that three dogs and their handlers from Juneau had spent 100 hours in the woods.

Although the "official" search was suspended, some 80 volunteers, including members of the fire department, used the fire hall as a starting point for their efforts on Saturday and Sunday. And, as on previous days, an undetermined number went into the woods to search without checking in.

Early Thursday night searchers' hopes had been buoyed when a team headed by Kluting discovered a site on the hillside where they believed the boy had spent a night.

Under the fallen tree someone had lined up sticks to form a wall. There were a child's footprints, where dirt was kicked against the side. Caldwell said the boy, when rescued, confirmed he had spent one night under a log.

Friday's search from the log shelter went down into the Indian River Valley, which seemed to be the direction the small footprints led. Searchers formed a long line, spaced about 10 yards apart, and plowed through devil's club, blueberry bushes, and deadfalls for the rest of the day.

Kluting said it now appears that Jeffrey went around the side of Gavan Hill and actually climbed higher, to within about 500 feet from the top. At one point, continued Kluting, the boy must have actually crossed the main Gavan Hill trail, apparently without recognizing it, in order to have reached the spot where he was found.

Many Sitkans took off from work and gave up leisure time to beat through the brush, and many others donated food and beverages for the search teams.

Searchers ranged from teenagers to men over 60, who lugged backpacks through the woods all day. Many commented that they were motivated by visions of how they would feel if it were their own child lost in the woods.

Jim and Nancy Hope used their own credit card to advance the expenses of the three bloodhounds and their trainers Sunday.

Said Caldwell, also a father, when the search was ended, "I kept thinking how his folks must feel. A couple dark nights, it really bothered me. I knew he was still out there somewhere. I had a gut feeling."

...if it had been as rainy as usual in Sitka, without shelter the boy would have been at risk of life-threatening hypothermia.

The Daily Sentinel

Sitka, Alaska — Tuesday August 25, 1987

Boy Bounces Back After 5 Days On Hill

By **Allen Sykora**
Sentinel Staff Writer

Nine-year-old Jeffrey Young says he "wasn't ever scared" during his five days and nights alone on Gavan Hill, but adds he'd rather see people than trees."

The boy spoke about his adventure this morning in his Mt. Edgecumbe Hospital room as he opened a model airplane, one of the many gifts from the steady stream of family and friends who have visited him.

Jeffrey was reported missing one week ago today, when he became separated while following his older brother Tom on a hunting trip. The brother reported that he left Jeffrey on the trail to rest, but that Jeffrey was no longer there when he returned.

Jeffrey said he waited for some time, and then decided to walk back to town, and got lost. He said he spent one night underneath a log, forming a wall on one side by arranging sticks. Searchers found this place Thursday night, and the discovery spurred new hope for finding the boy.

Jeffrey said he left that shelter and wandered on, until he ended up in the steep gully where he was finally located by a volunteer searcher Sunday morning.

"I was trying to come back to town and my leg started to get sore," he said today. "I decided to stay there and wait for someone to find me. That's the only way I'd make it."

The examining doctor said Jeffrey was in generally good condition. He suffered some bruises and swollen feet.

"I wasn't ever scared at all," said Jeffrey. However, he said, when searcher Dave Caldwell walked nearby shouting his name, "I was pretty happy to hear a voice. It's better to see people than it is to see trees."

Jeffrey said he made a bargain with God while on the hill.

"I asked him if I could go home, then I wouldn't fight with my mom any more. I was thinking about getting home and stuff, and riding my bike. Only now I can't," due to his swollen feet, he said.

Dr. Thomas Krahn said no decision had been made on when the youth would be discharged from the hospital. The Mt. Edgecumbe staff physician said Jeffrey was being held for observation due to the swollen feet.

Jeffrey said he didn't get hungry the first couple of days because of an abundance of berries. "There was a bunch of salmonberries up there," he said.

But he ended up in a gully he couldn't get out of and during his last two days on the hillside he had access only to water, he said.

Jeffrey will enter the third grade in the fall. He said he had never hiked up Gavan Hill before, although he had been on top of nearby Harbor Mountain. The story of the search and subsequent rescue of Jeffrey has received national attention. His mother, Jennifer Young, said today that she has received telephone calls from the International News Service and NBC News.

Beginning Wednesday, Sitka rescue personnel and volunteers spent thousands of hours combing Gavan Hill and the Indian River Valley. In addition, Coast Guard and private helicopters spent 32 hours searching for the youth.

In addition, more than 100 dog-hours were logged by official search parties, and preparations were under way to bring in bloodhounds when Jeffrey was found on Sunday.

SEADOGS, a Juneau-based group that makes their trained tracking dogs available for searches, brought two golden retrievers and one German shepherd into the search. A golden retriever owned by Sitka Volunteer Fire Department member Karen Royce was also on Gavan Hill.

Some volunteers brought their own dogs to help search at varicus times, authorities said.

The SEADOGS (Southeast Alaska Dogs) are trained to follow the airborne scent of a search subject, explained coordinator Bruce Bowler. The dogs run freely and follow voice and hand commands.

On the other hand, he said, bloodhounds are generally deployed on a leash and follow the scent trail on the ground. Experienced bloodhounds can also follow an airborne scent, he said.

Besides "trailing," SEADOGS are trained to sniff out victims in cave-ins, earthquakes and avalanches, said Bowler. The handlers also undergo intensive training, not only in trailing with the dogs, but in use of compass and maps, first aid, and wilderness survival, so they are prepared to enter unfamiliar wilderness terrain, said Bowler.

The Seven Steps to Survival will help improve your survival skills and positive thinking. These seven steps came from people who survived emergencies.

1. Recognition "Oh no—I'm in trouble!"

The most important step is recognizing that you are in an emergency. If you don't recognize when you're in an emergency, you can die.

Most people don't admit they are in trouble until they are in the middle of an emergency. Here are some situations that could be emergencies:

- If you are out berry picking with your brother and you separate from each other, are you in danger? What if it is getting dark and you're not sure where you are or how to get back home?
- If you are out boating and your outboard starts sputtering, are you in an emergency? What if your engine dies and you start drifting toward a big rock?

If you're not sure that you are lost or in trouble, assume you are. Many people fail to recognize that they are in trouble. Many have died because they were too "tough" to accept this fact.

2. Inventory "What do I have with me? What should I do?"

You must think about what you have going for you and what you have going against you.

S - Sit
T - Think
O - Observe
P - Plan

An inventory has three parts:

❶ First, treat anyone who is seriously injured or has hypothermia.

If you are with someone who is hypothermic, you can warm him or her with your own body heat inside jackets or sleeping bags.

❷ Second, find a nearby spot that is protected from cold, wind, and rain.

If you are along the shore, you should go into the woods to protect yourself from the rain and wind.

❸ The third part of inventory is to find what you can use that will help you stay alive.

See what you have on you (such as a knife or a mirror) and what you can use from the land (such as driftwood or plastic jugs) to improve your situation. It is very important to have a survival kit on your body—NOT left on a boat or somewhere else.

3. Shelter "I need to stay warm."

People who die in survival situations generally die from one of two causes—drowning or hypothermia.

Hypothermia happens when the body's temperature gets lower. The symptoms are shivering, feeling depressed, slurred speech, and lack of coordination.

Protect yourself from hypothermia by staying dry and warm.

Clothing

Clothing is your primary shelter. When you get ready to go on an outing, dress for the worst weather.

Always dress for an emergency or take warm clothes along. Always take a hat. 50% to 75% of the body's heat can be lost from the head.

The best way to dress for an outing is in layers. Wool and polypropylene are better than cotton because they are warmer and they insulate even when they are wet.

Emergency Shelter

You can build an emergency shelter to protect yourself from the wet and cold.

A good shelter must be:

- Small
- Insulative
- Windproof and rainproof

A shelter traps heat next to your body. The shelter must be small, since your body will be the only heater. The insulation helps keep the heat in, and plastic or branches help keep it dry.

When selecting a place to build your shelter, look for a place out of the wind and rain. Be sure your site has good drainage.

You could build three kinds of emergency shelters:

- Garbage sleeping bag
- Debris bed
- Debris hut

You can make a garbage sleeping bag or a debris bed in a hurry, in an emergency situation:

- If someone is hypothermic and needs help right away
- If it's getting dark and you need to build something fast
- If you don't have the equipment or energy to build something better

It will take more time to build the debris hut shelter. If you have the time to build it, the debris hut shelter will last longer and will do a much better job of protecting you.

Garbage Sleeping Bag

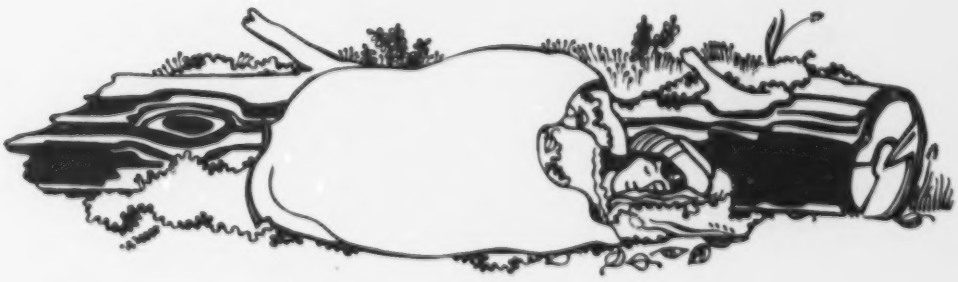
The garbage sleeping bag is just the right size for small kids (five or six years old).

Start with one garbage bag and fill it with moss, leaves, grass, or twigs.

Then hollow out the center and put another garbage bag in it. Now you have a garbage sleeping bag. Is it small, insulative, and windproof and rainproof? Yes, but the insulation is not the best.

When you are inside a garbage sleeping bag, you should wear a wool hat. Your head should stick out of the bag. Why? If you breathe in the bag, water from your breath will get inside the bag. Will the garbage sleeping bag fit a big person? No.

Put the garbage sleeping bag next to a log or tree, to help keep you out of the wind or rain.

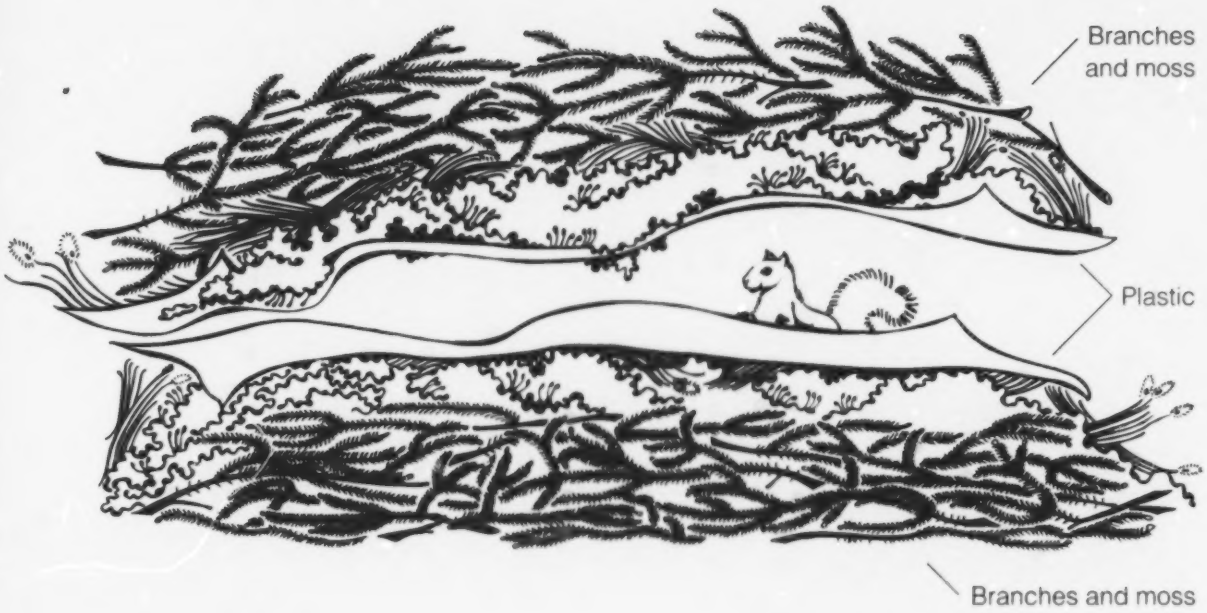


Debris Bed

If you are in immediate danger and are too big to sleep in a garbage sleeping bag, you can build this debris bed.

To make the debris bed:

1. Start the bed with a layer of branches 1 or 2 feet deep.
2. Cover with 1 or 2 feet of moss. Make the layers thick, because when you lie down the bed will flatten.
3. Cover the moss with a plastic sheet or a garbage bag cut open.
4. To make the blanke , top the bed with another layer of plastic (plastic to plastic).
5. Cover the second layer of plastic with moss, twigs, or branches.

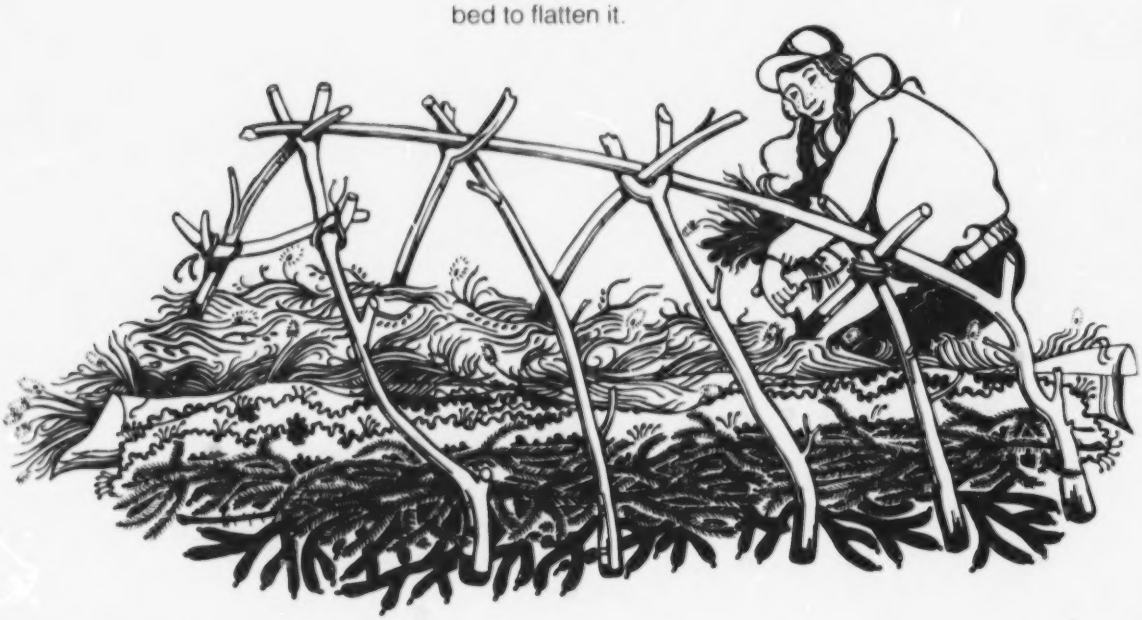


To get into the debris bed, crawl between the plastic sheets. Is this shelter small, insulative, rainproof, and windproof? No—it is not windproof.

Debris Hut Shelter

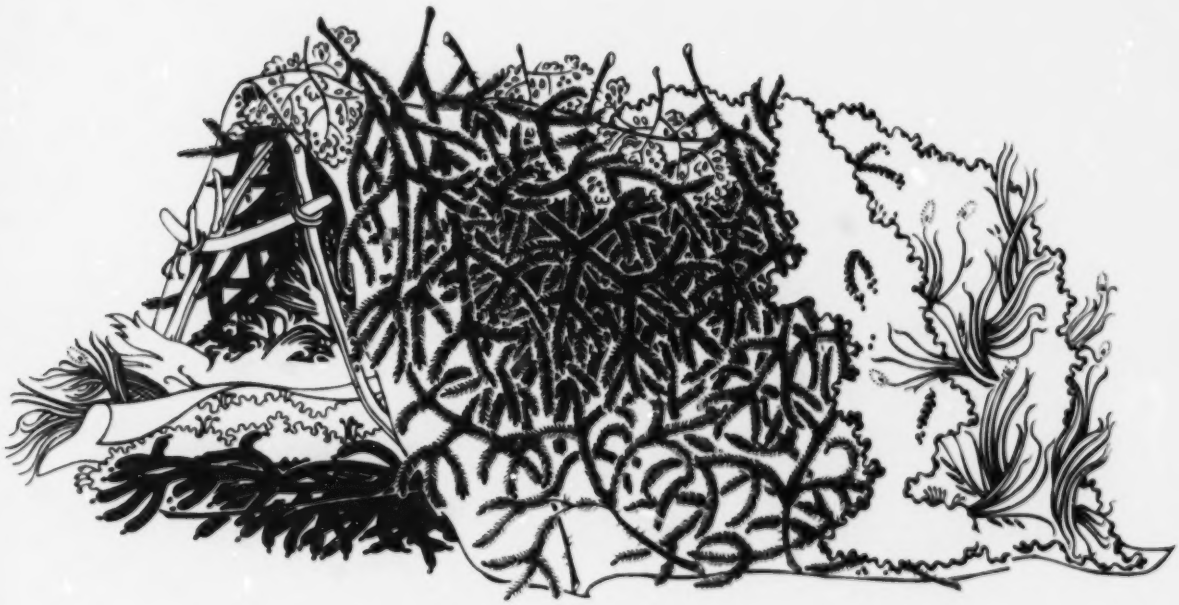
A debris hut shelter is made with an A-frame or a lean-to against a log. It has walls and a front door.

1. Start the bed with a layer of branches 2 to 3 feet deep.
2. Cover the branches with 1 to 2 feet of moss.
3. Cover the moss with plastic, such as an opened garbage bag. Lie down on the bed to flatten it.
4. Use three poles for the frame. Tie with rope, roots, etc.
5. Strengthen frame with additional poles.



A good debris hut shelter looks big from the outside, but inside it should be just big enough to fit you. When you are inside, it should be only six inches from you to the top and to each of the sides. Six inches is about equal to the distance between your thumb and little finger when they are outstretched. When you lie in your shelter with the door closed, you should not be able to see any light.

6. Cover frame with plastic, or big leaves.
7. Put boughs on top of the plastic.
8. Cover boughs with small branches.
9. Place a thick layer of moss on top of the branches, so you can't see any light from the inside.



10. Make a flap door with tree branches, or a stuff door with plastic and moss.

The more signals you have, the better!

BEST COPY AVAILABLE

4. Signals "Hey! I need help over here!"

You can help search parties find you by putting up signals. To be effective, signals must:

- attract attention
- send a message of distress

Some signals can be carried with you in your survival kit:

- Signal mirrors
- Whistles
- Flares
- Reflectors (aluminum foil)
- Lights
- EPIRBS (Emergency Position Indicating Radio Beacon)
- VHF radio

Some signals can be constructed using things that you find:

- Hanging clumps of trash
- SOS of driftwood, seaweed, or grass. Build it above the high tide mark.
- Fires and smoke

Rules to remember when setting up signals:

- The more signals you have, the better.
- You need signals that are visible from **air, land, and sea.**
- Signals must be large! Each letter of an SOS should be 18 feet x 3 feet.
- **Three** signals mean distress. An SOS has **three** letters. Hang **three** clumps of trash from trees or drift logs. Use **three** fires in a line.
- Use colors that contrast with the background: hang life preservers or bright bandanas.
- Moving signals catch the searcher's eye.
- If you are using a fire, you must have someone on watch at all times to keep the fire burning and to make sure it doesn't spread.

Use the right signal in the right place:

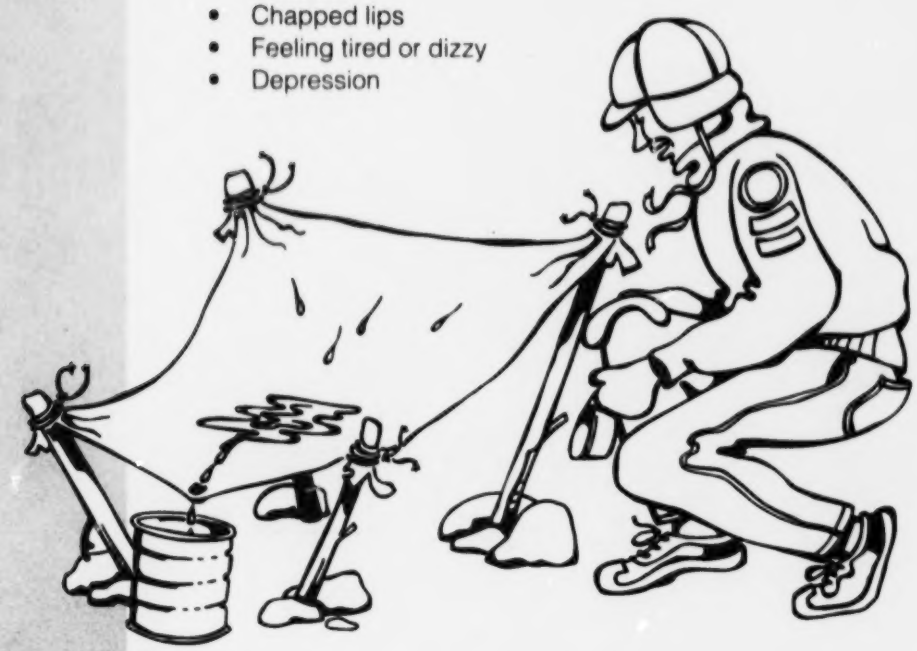
- Forest: whistles, bright colors, something reflective
- Coastline: SOS, hanging trash, something reflective
- From a boat: mirrors, bright colors, water dyes

5. Water "I need to avoid dehydration."

You need 6 to 8 pints (3 to 4 quarts) of water every day. How much is 6 pints? Lots! 6 pints = 8 pop cans = 12 cups.

If you don't get enough water, you can become dehydrated. What are the symptoms?

- Craving for cold or wet foods
- Dark urine
- Headache
- Chapped lips
- Feeling tired or dizzy
- Depression



When you are dehydrated your body and mind don't work as well as usual. If you become severely dehydrated you can die. If you don't have any water in an emergency situation you should:

- Avoid a lot of activity such as hiking.
- Eat very little, because digestion requires water.

Water that is safe to drink:

- Rainwater collected in a clean container
- Water that you brought with you
- Water that has been boiled for 20 minutes

All other sources of water are not safe to drink. River or lake water should be boiled for 20 minutes. Never drink seawater or urine.

To collect rainwater you can use plastic containers, ziploc bags, bark, clamshells.

6. Food "Eat safe foods."

There are three rules for foods in a survival situation:

- If you don't know it—don't eat it.
- If you don't have water—eat very little.
- Try to eat several kinds of food, rather than a lot of just one kind.

If you are lost along the shore it is easy to find food. You can eat almost all seaweeds, plus limpets, crabs, and small snails.

Don't eat clams, cockles, mussels, oysters, scallops, barnacles, or moon snails. They may have Paralytic Shellfish Poisoning (PSP), also called red tide. Even if you eat them at home, never eat them in a survival situation! At home you can go to the hospital if you get PSP. Out in the wilderness you could die.

Don't eat starfish, jellyfish, sponges, sea anemones, sand dollars, or the hairy triton. They are all unsafe to eat.

Mink, marten, squirrels, rabbits, birds, and mice are all small game animals that are safe to eat. But they take much more time and energy to get than sealife. For that reason it makes more sense to collect sealife for food in an emergency situation, if it is available.

Try to balance your diet by eating plants also. Eat leaves in the spring, eat berries in the summer, and eat roots in the fall and winter. It is very important to learn which plants are safe to eat. Alaska has some poisonous berries, leaves, and roots.

Remember: If you don't know it—don't eat it! You can live for weeks without food.

7. Play "Think positive."

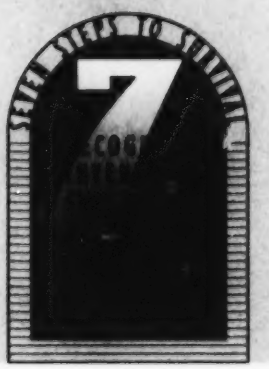
Play is important to avoid depression. You can keep yourself busy and happier by doing these things:

- Improve the shelter
- Build more signals
- Collect water
- Collect food (try fishing)
- Talk and tell stories
- Play games

If you are alone, think about what you will do when you get home. If you are sitting around feeling sorry for yourself, get up and do something!

If you are with other people, watch them to make sure they are not depressed or scared. Remember that inactivity can be a sign of depression or fear. So keep everyone busy and talking.

Try to think like a survivor, not like a victim.



HOW TO BUILD A FIRE

For the survival course, your fire should burn for 10 minutes. This tells you how to build a fire that will burn for longer than 10 minutes.

Air, fuel, and heat are needed to start a fire and to keep it going.

Fuel is anything that burns well such as logs, twigs, pitch from trees, plastic, or paper. Fuel includes tinder (small dry twigs, pitch, or grass), kindling (small branches or wood, no bigger around than your finger), and large fuel (driftwood or logs).

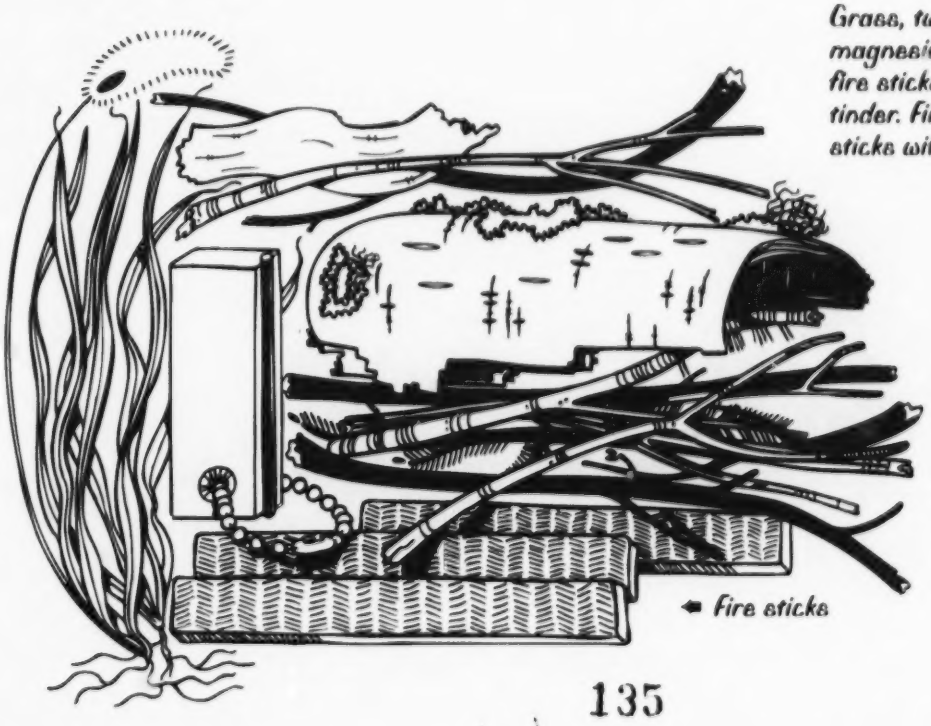
Air or oxygen is necessary to ignite a fire and to keep it burning.

Heat is supplied from the spark of a flint or by a match.

First locate a site sheltered from wind and rain. Collect enough tinder and kindling to supply a fire for at least 20 minutes and enough large fuel for the day.

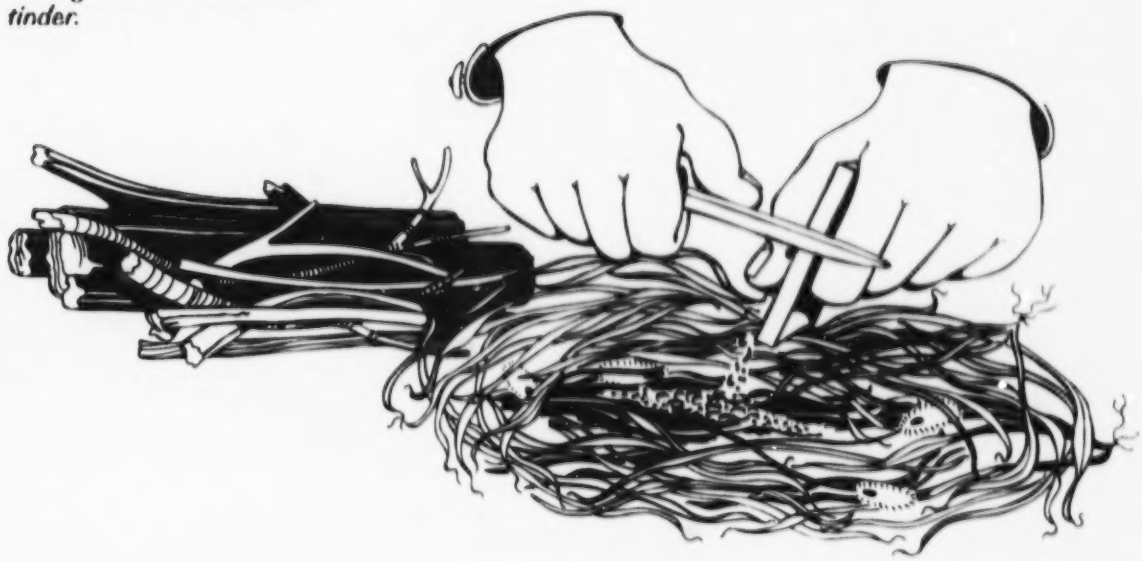
Arrange tinder to allow room for oxygen. Kindling can be cross-hatched on top of tinder or stacked in a teepee shape. If a magnesium fire starter or other flint material are being used, add kindling sparingly after starting a flame.

Kindling should burn for several minutes before adding larger fuel. Do not smother the fire by adding too much fuel at one time. Larger fuel should also be added sparingly. A small fire is adequate to boil water or cook food.

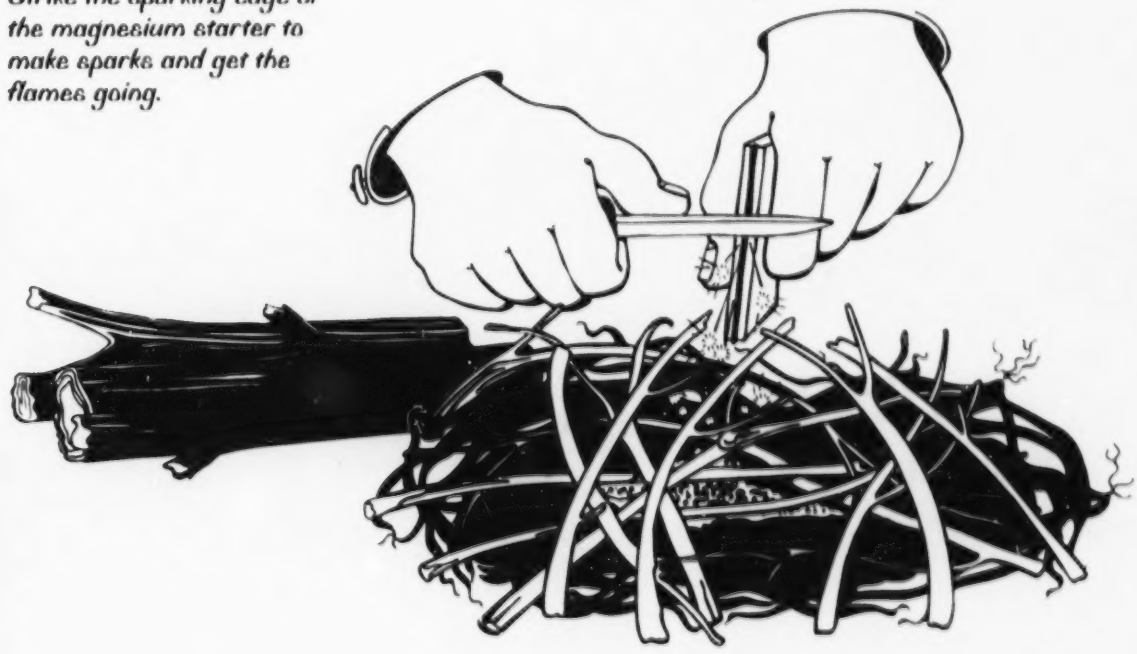


Grass, twigs, birch bark, magnesium fire starter, and fire sticks can be used for tinder. Fire sticks are wood sticks with paraffin.

Using a knife, shave pieces of magnesium starter onto tinder.



Strike the sparking edge of the magnesium starter to make sparks and get the flames going.



1. A _____ is anything that protects you from the environment.

2. Your primary shelter is your _____.

3. The way to dress for an outing is in _____. (long underwear, under wool clothes, covered by rain gear)

4. A wool _____ is essential, because you can lose up to _____ percent of your body heat without one.

5. An emergency shelter is something you can build to protect yourself from hypothermia. The three "musts" to a good shelter are:

   a.

   b.

   c.

6. How do you build a good debris hut shelter?

   a. Start with the _____. Use a layer of _____ 2-3 feet thick.

   b. On top of this, put at least one foot of _____.

   c. Next add a garbage bag or plastic sheeting.

   d. Then work on the top. Start with the frame, put three small poles over the _____. Tie the poles together with rope found along the beach, tree roots, bull kelp, plastic strips, or other material.

   e. Cover the frame with a cut open garbage _____ or other plastic.

   f. _____ goes on top of the frame.

   g. _____ goes on top of the branches.

7. How big should you make your shelter?

8. If you look inside the shelter and see _____ your shelter is not weatherproof and you need more _____.

9. What can you use for a door?

NOTE TAKING GUIDE

10. Draw a picture of what your shelter might look like and label the parts.

1. To help search parties find you, you can use a _____, which is the fourth step to survival.

2. What two things must signals do to be effective?
   a. _____(let someone know where you are)
   b. _____ (let them know you want to be rescued)

3. What are some possible items you can use to make signals?

4 What are some rules to remember when setting up your signals?

5. What signals are best for use in each of the situations listed below?

   Forest:

   Coastline:

   In the water:

6. To signal distress, _____ is the magic number.

7. Each letter in an SOS must be _____ feet high and _____ feet wide.

1. List two edible plants in your region that you can find in:

   Spring _____

   _____

   Summer _____

   _____

   Fall _____

   _____

   Winter _____

   _____

2. List two poisonous plants found in your region.

3. Your body needs at least _____ pints of water every day.

4. To make creek water safe to drink, it must be _____ for _____ minutes.

5. If we do not get enough water to drink, our body will start to _____.

6. If you eat clams, cockles, or barnacles picked from Alaska's beaches you could die from _____.

1. The last step in the seven steps to survival is _____.

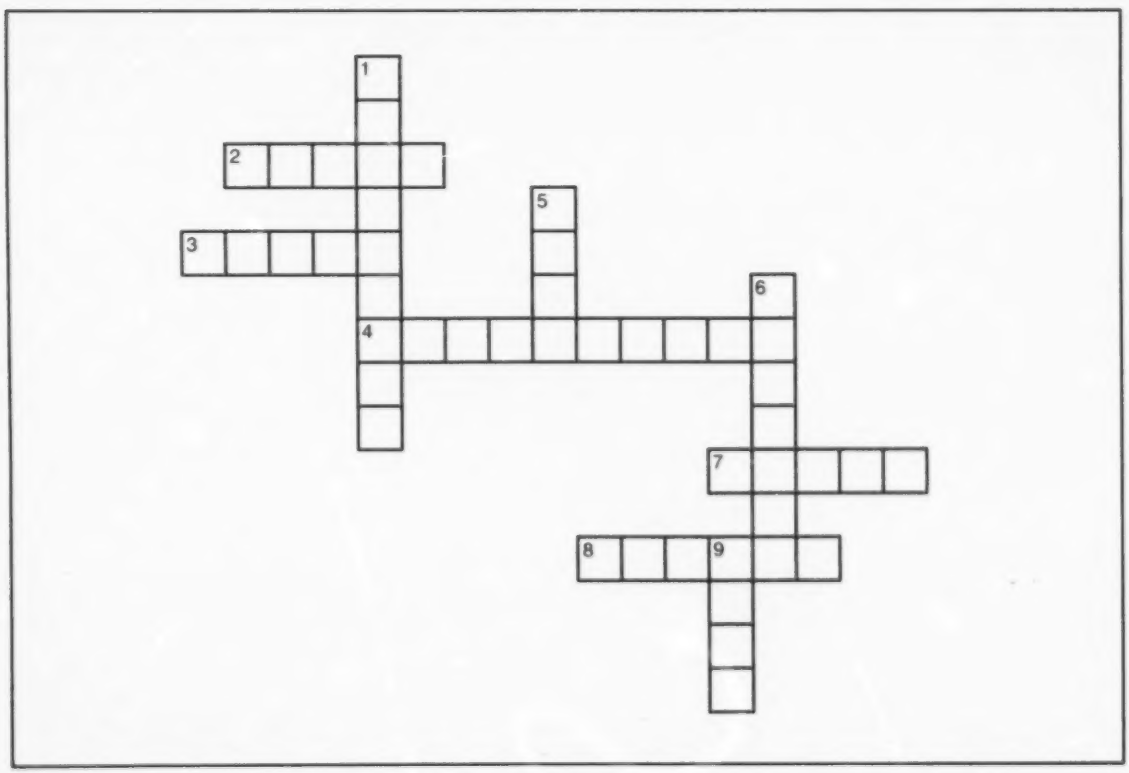
2. Name two reasons why play is important.

3. What kinds of things can you do for play?

4. Describe a game you could play if you were in a survival situation all by yourself, or one you could play if there were other people.

SURVIVAL CROSSWORD PUZZLE

1. A first sign of hypothermia
2. Best survival tool
3. _____ (number) of anything will signal for help
4. A shelter must be small, _____, and weatherproof
5. A fabric that keeps you warm even when it is wet _____
6. A signal must attract attention and send a _____
7. You can go without _____ for 3-4 days
8. An edible sea animal with one shell
9. Depression can be avoided by _____



What Is a Survival Kit?

A survival kit has things in it you can use to survive an emergency.

You should keep it in your pocket, around your neck, or attached to your belt. Use a ziploc freezer bag for a container.

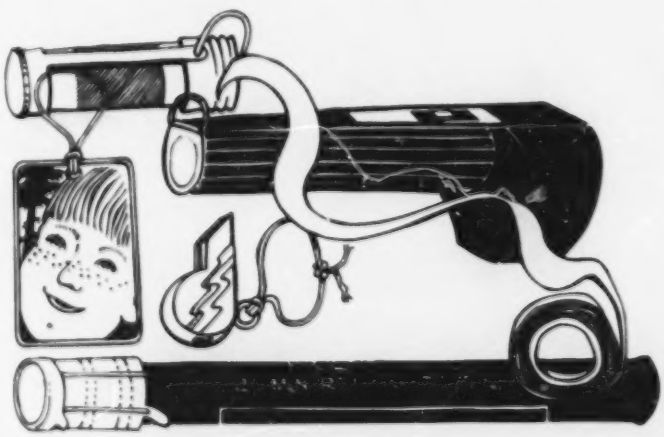
Building a Survival Kit

These things should go into your survival kit:

- **Shelter**
  - Large plastic garbage bags or tube tent
  - Nylon parachute cord or strong twine (20 feet)
- **Signals**
  - Signal mirror
  - Whistle
  - Surveyor tape
  - Magnesium fire starter
  - Matches (waterproof and windproof)
  - Fire starting materials (waxed wood)
  - Heavy duty aluminum foil
- **Tools**
  - Sturdy pocket knife or hunting knife
- **Personal Health**
  - Prescription drugs if you need them

Other things you may want to take along:

- **Shelter**
  - Wool hat
  - Thermal foil blanket (space blanket)
  - Rain suit (jacket and pants)
  - Plastic sheeting
  - Extra clothes
- **Signals**
  - Brightly colored cloth
  - Cyalume chemical light sticks
  - Extra aluminum foil, heavy duty
  - Battery powered EPIRBs (Emergency Position Indicating Radio Beacons)
  - Emergency strobe lights
  - Fluorescent water dyes



- **Health**
  - Bandaids
  - Compresses (for bleeding)
  - Triangular bandage
  - Chapstick
  - Aspirin
  - Disinfectant
  - Insect repellent
  - Personal items: feminine hygiene supplies, vitamins, etc.

✔ *Remember that a good insulative hat is essential!*

- **Food and water**
  - Chocolate bars and hard candies
  - Instant cocoa
  - Packaged water
  - Water purification tablets (iodine or Halazone)
  - Ziploc freezer bags (for holding food and water)
  - Fruit bars
  - Powdered bouillon (salt free)
  - Coffee or herbal tea

- **Fire and light**
  - Flint starter kit
  - Waterproof flashlight
  - Candles

- **Tools**
  - Compact pocket saw
  - Duct tape
  - Cable snares or small gauge wire
  - Fish line
  - Fish hooks
  - Magnetic compass

Survival Kit ↓

You should watch out for these dangers in Alaska waters, whether you are fishing, hiking, beachcombing, or traveling by air or boat.

- Currents from tides and in rivers
- Weather, such as wind, waves, and rain
- Cold temperatures
- Debris, such as logs, deadheads, and kelp

What can happen to you if you fall in the water?

- You can rescue yourself
- You can be rescued
- You can drown

Drownings in Alaska's Waters

Alaska's drowning rate is ten times the national average. Drowning is a leading cause of accidental death in rural Alaska.

Here are the reasons why many people drown in Alaska.

- People spend more time around water
- They can't swim, because small towns don't have swimming pools to learn in
- They don't have Personal Flotation Devices (PFDs)
- People who have PFDs don't wear them
- Many have been drinking alcohol
- Many don't know water rescue skills
- Cold water causes hypothermia

Preventing Drowning

How can you reduce the drowning rate and increase chances of surviving in cold water?

- Use PFDs around water
- Know rescue and self-rescue skills
- Stay out of the water

How long will you survive in cold water? It depends on two things:

1. You must keep floating.
2. You must have insulation to stay warm.

Self-Rescue

You can help save yourself by wearing a PFD and insulative clothes. If the boat is sinking, let it sink under you. Don't jump overboard. If the boat is going down and you have time, put on a PFD, a warm hat, and warm clothes.

Clothes, including boots, will not drag you down in the water and can help keep you warm. Layers of clothing also trap air, which can help you float. If you take off boots and clothes in the water, you will lose body warmth and energy.

Rule: When in the water, protect high heat-loss areas: head, neck, armpits, sides, and groin.

If you have to get into the water, enter slowly to avoid cold water shock. Try to keep as much of your body as possible out of the water.

Stay with the boat as long as you can, because

1. The boat will help you float.
2. The boat will be more visible to rescuers.
3. Rescuers will search where the boat was going.

Huddle Position

Rule: Try to float and to minimise heat loss until you are rescued.

Rule: Assume the H.E.L.P or Huddle position depending on the situation.

H.E.L.P. Position

Survival Times in Cold Water

Children cool off in cold water much faster than the average adult. A man of average build will be helpless from hypothermia (below normal body temperature) at 41°F after 40 minutes or more if he is wearing thick clothing. Thin men or those dressed in light clothing will become hypothermic more quickly. A woman usually cools off more slowly than a man.

If you go overboard in cold water, you should float quietly in a H.E.L.P. or huddle position, or cling to the boat. You should avoid swimming, because a person swimming in cold water cools off much faster than a still person. When you swim you produce three times as much heat as when you are floating, but the heat doesn't keep you warm. Instead, the heat is lost to the water because of more blood circulation to the arms, legs, and skin.

This chart gives average survival times. The survival times are long because they include periods when the person is unconscious.

Rule: Don't try to swim to shore. In cold water a person can swim only 1/10 the distance he or she can swim in a nice warm pool. When you swim, you lose heat. Hypothermia can set in and lead to a quicker death.

Hypothermia Prevention Methods and Equipment Increase Survival Time

	Predicted Survival Time in 50°F Water
Without flotation device worn	
Treading water	2 hours
With personal flotation device (vest or collar-type PFD)	
Swimming	2 hours
Holding still	2.7 hours
H.E.L.P. position	4 hours
Huddling with others	4 hours
With hypothermia prevention flotation equipment	
Insulated flotation jacket ("float coat")	3 to 9 hours
Survival suit	12 to 36 hours

Adapted from Survival in Cold Water, by Chad Dawson, Minnesota Sea Grant Extension Program

Personal Flotation Devices (PFDs)

There are five kinds of PFDs:

Type I.

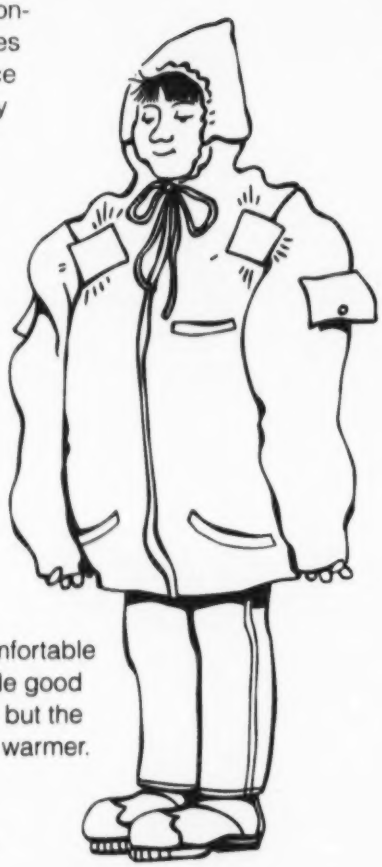
Offshore Life Jacket.

It floats very well, and it turns an unconscious person face up. But it is bulky, and not very warm.

Type II.

Nearshore Buoyant Vest.

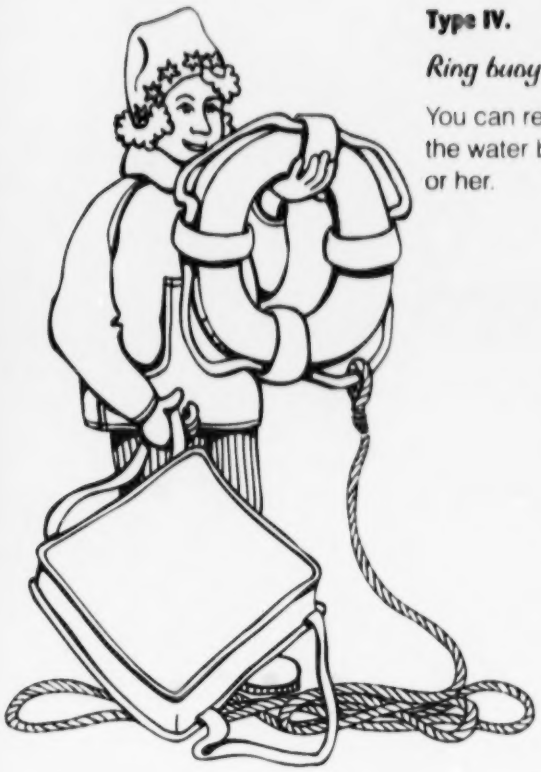
This is a typical life vest. It keeps the head and neck out of the water on unconscious people but it does not always keep the face up. Type IIs are not very warm.



Type III.

Vest, float coat.

These are the most comfortable PFDs. They both provide good flotation and insulation, but the float coat will keep you warmer.



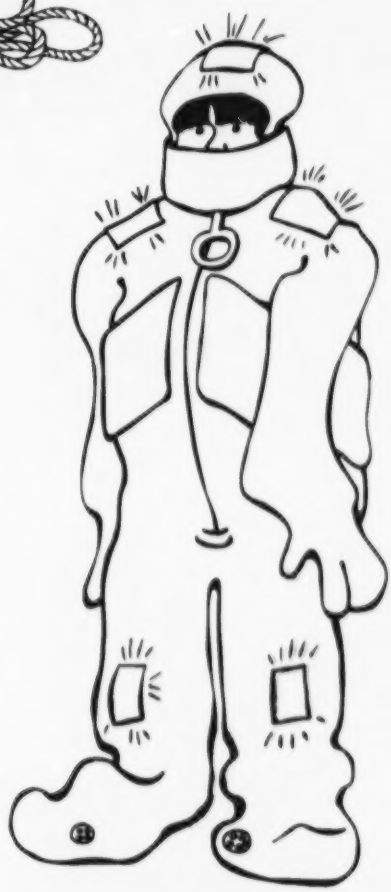
Type IV.

Ring buoy or seat cushion.

You can rescue someone in the water by tossing it to him or her.

Type V. *Overalls.*

These are similar to a survival suit but are much more comfortable to work in. They provide excellent flotation and insulation.



Survival Suit.

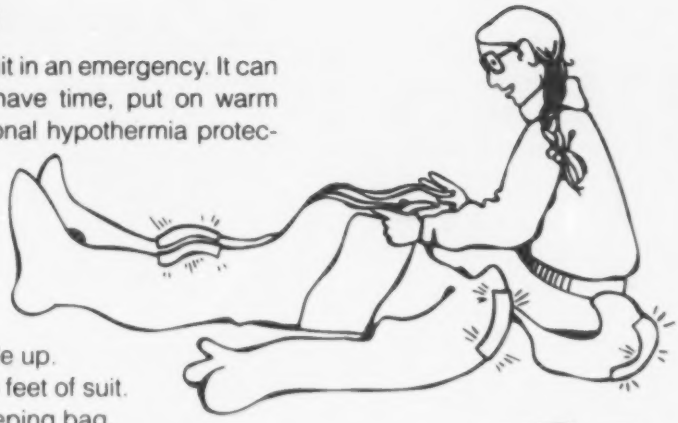
A survival suit helps you float and keeps you warm. A person can survive in cold water for up to 24 hours in a survival suit.

The best kind of PFD is one that you will wear!

How to Put on a Survival Suit Fast

This is a quick way to get into a survival suit in an emergency. It can help you when seconds count. If you have time, put on warm garments and leave shoes on for additional hypothermia protection and use on the shore.

Practice this in a pool or at the dock.

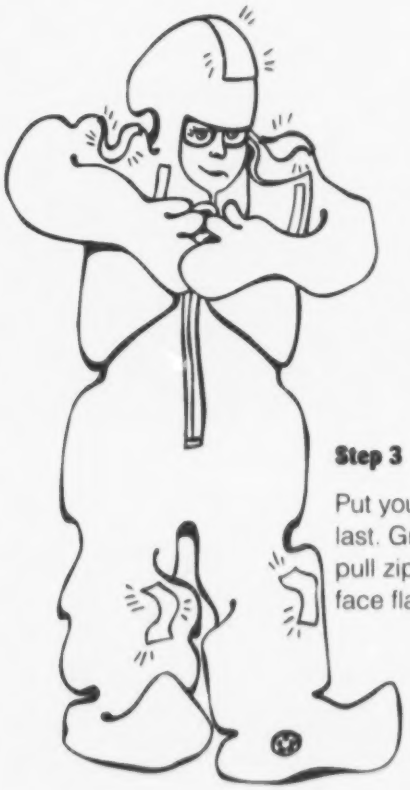


Step 1

- Lay the suit flat with the zipper side up.
- Sit on the dock and work legs into feet of suit.
- Scoot down into the suit like a sleeping bag.
- Put straps around ankles.
- Stand up.

Step 2

Put your non-dominant arm into the suit first (your left arm if you are right handed). Pull the hood over your head with your free hand. You can do this while standing, or from a kneeling or sitting position.



Step 3

Put your dominant arm in the suit last. Grab lanyard on zipper and pull zipper all the way up. Fasten face flap over face.

WARNING!

Do not inflate air bladder until you are in the water. This will prevent damage to your neck and the zipper if you must jump into the water.

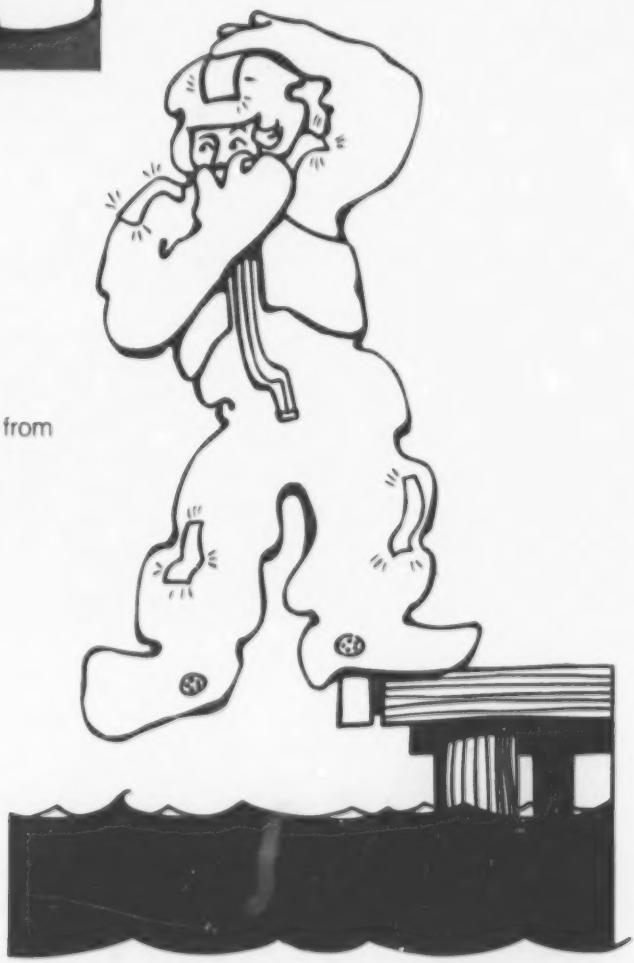
In and Out of the Water with a Survival Suit

The best way to get into the water while wearing a survival suit is slow entry.

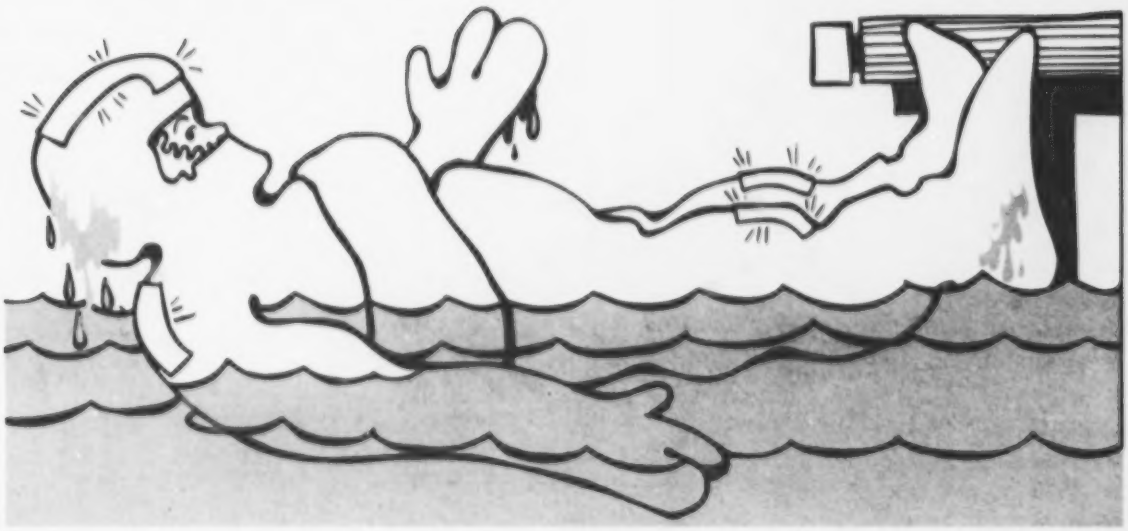
- Sit down on dock with feet dangling in water.
- Slide into water and float on your back.

Or you can step off.

- Face sideways to dock.
- Protect your head with your arm nearest dock.
- With your other hand, hold suit away from the face to let air escape.
- Step out and away, feet first.
- Float on your back.



While you are wearing a survival suit, the best way to swim is on your back. Most of the swimming action is with your arms.



When you're getting out of the water, keep your face toward the dock to avoid back injury.

After you are done using a survival suit (for practice or in an emergency), rinse it in fresh water on the outside and inside and dry it in a cool, dark, dry place. After the suit is dry, coat the zipper with non-petroleum wax. Store suit with zipper open.

RESCUING OTHERS

Rescue others without getting into the water. Why? It is too easy to become a second victim.

- A panicked victim may cling to you and pull you under.
- You may both die of hypothermia.
- Water dangers may kill both of you.

REACH, THROW, and TOW
BUT DON'T GO!

When rescuing a drowning victim, yell to the victim and let him or her know what you are doing.

Try to **REACH** the victim, using a long pole or even clothes.

Or, **THROW** anything that floats, such as styrofoam, water jug, cushion, etc.

Then **TOW** if you can pull the victim in. Pull the victim toward you with a slow and steady movement.

What if you don't have anything to use for rescue? If there are two people, one should run for help and the other watch the victim. If there is only one person, he or she should mark the location and run for help. Even if the person looks drowned, it is important to try to rescue or go for help. The victim may still be alive, and you should give him or her every chance to be rescued.

Survival Books to Read

Bailey, M. 1974. **Staying Alive 117 Days Adrift.** D. McKay Co., New York. A true story of a couple surviving at sea for 117 days.

Ball, J. 1966. **Arctic Showdown.** Van Rees Press, New York.

Blades, A. 1977. **A Boy of Tache.** Scribner/Tundra. Fiction set in Canada.

Budhill, D. 1976. **Snowshoe Trek to Otter River.** Dial. Three short stories about two boys.

Defoe, D. 1981. **Robinson Crusoe.** Bantam Books, New York.

East, B. 1980. **Found Alive.** Crestwood House, Mankato, MN. Youth survival fiction.

Fortier, E. 1978. **One Survived.** Alaska Northwest Publishing Co., Anchorage, AK. A true story of an Eskimo hunting party. Three are lost on ice floes, and one survives for 21 days.

Gannon, R. 1973. **Great Survival Adventures.** Random House/ Knopf, New York.

Houston, J. 1977. **Frozen Fire.** Atheneum, New York. Youth survival fiction.

Johnson, A. 1964. **The Grizzly.** Harper and Scholastic Book Services, New York.

Kavaler, L. 1973. **Life Battles Cold.** John Day Co., New York. Youth-level book on various aspects of living or responding to cold environments.

Klaben, H. and B. Day. 1964. **Hey, I'm Alive!** Scholastic Book Services, New York. True story of wilderness survival.

London, J. 1951. **To Build a Fire.** In **The Sun-Dog Trail and Other Stories.** The World Publishing Company, Cleveland, OH.

Mathieson, D. 1985. **Trial by Wilderness.** Houghton Mifflin Company, Boston.

Morey, W. 1971. **Deep Trouble.** Duttons Childrens Books, Penguin Books USA, New York. Alaska adventure story.

Out in the Wilds: How to Look after Yourself. 1977. McPhee Gribble Publishers. A young person's book on how to react in a lost-in-the-woods experience.

Paulsen, G. 1987. **Hatchet.** Bradbury Press, New York. Youth survival fiction.

Politano, C. 1984. **Lost in the Woods.** Porthole Press Ltd., Sidney, British Columbia, Canada. A young person's book on a lost-in-the-woods experience.

Politano, C. 1986. **ADRIFT! Boating Safety for Children.** Porthole Press Ltd. Sidney, British Columbia, Canada. A young person's book on a lost-in-a-dinghy experience.

Water Safety Coloring and Activity Book. Minnesota Department of Natural Resources, Box 46, St. Paul, MN 55146.

Wilderness: A Survival Adventure (computer game). Peachtree Software, 3445 Peachtree Road N.E., Atlanta, GA 30326-1276. Computer game for Apple II plus, IIe, or IIc; 48 K RAM.

Wortman, E. 1981. **Almost Too Late.** Random House, New York. A true story of a family shipwrecked off southeastern Alaska for three weeks. It serves as a study of what not to do, but provides good discussion for ways to improve a survival situation.

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